

CANADIAN PUBLIC HEALTH JOURNAL

DEVOTED TO PREVENTIVE MEDICINE

VOLUME 29

April, 1938

NUMBER 4

Mental Hygiene and Public Health

B. T. McGHIE

Post-Poliomyelitis Paralysis

G. A. RAMSAY AND R. A. JOHNSTON

Vital Statistics in Public Health

D. V. CURREY

A Survey of Tuberculosis Patients

WM. MORRIS

Recent Health Legislation in Canada

R. D. DEFRIES

Trichinosis in Montreal

J. H. GERVAIS



**TWENTY-SEVENTH ANNUAL MEETING
HALIFAX, N.S., JUNE 20-22**

PUBLISHED MONTHLY BY THE
Canadian Public Health Association
105 BOND STREET TORONTO, ONTARIO

In Obstetrical and Surgical Practice

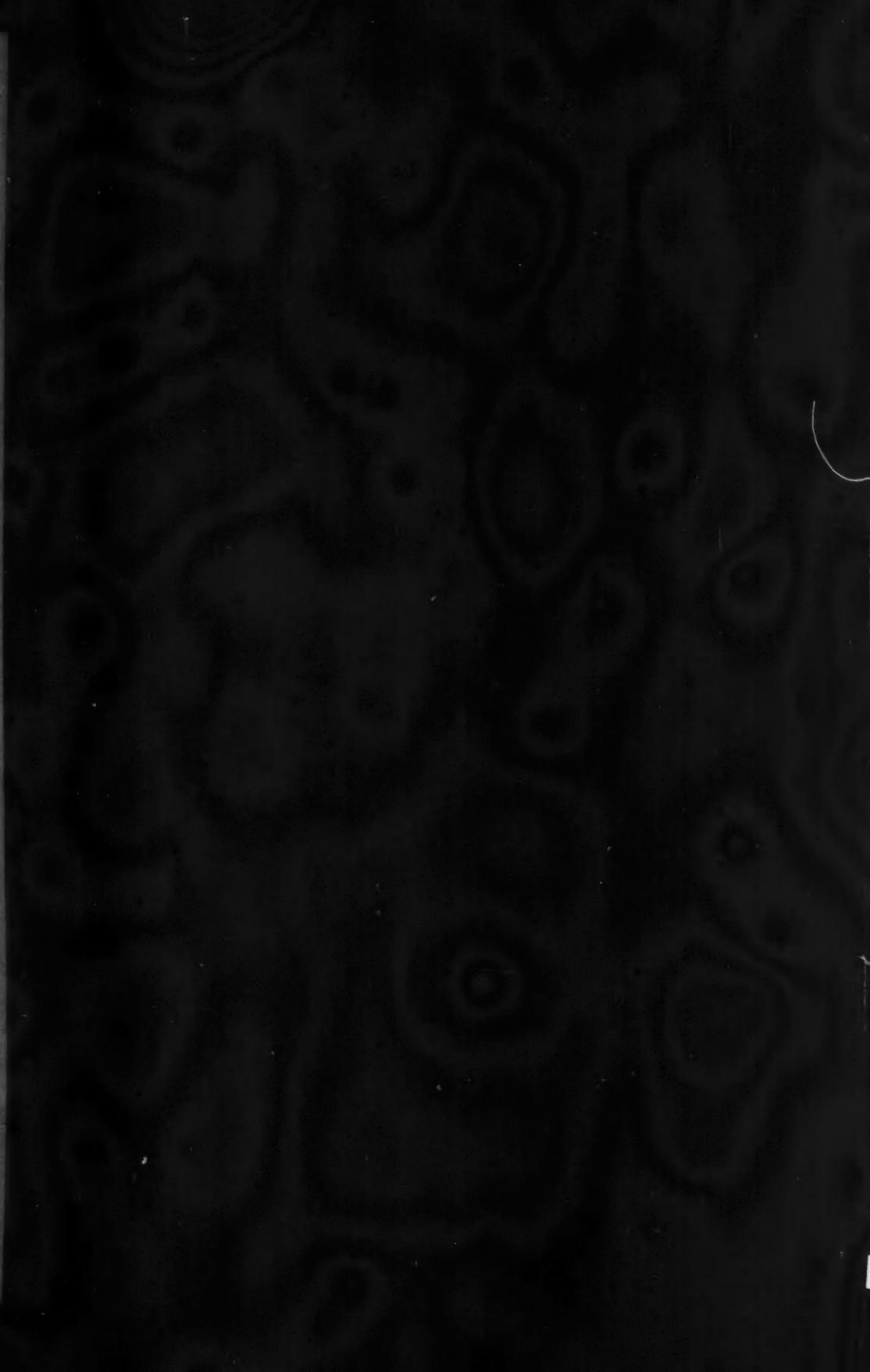
Pituitary Extract (posterior lobe), an aqueous preparation derived from the separated posterior lobe of the pituitary gland, holds a well recognized place in *materia medica*.

In response to requests of physicians and hospitals the Connaught Laboratories have made available a preparation of Pituitary Extract (posterior lobe). This preparation is a highly stable extract, biologically standardized to contain ten International units per cc. It is supplied in packages of five 1-cc. vials having rubber stoppers which make possible the aseptic withdrawal of individual doses without contaminating extract left in the vials for later use. Information relating to Pituitary Extract (posterior lobe) will be supplied gladly upon request.

**CONNAUGHT LABORATORIES
UNIVERSITY OF TORONTO**

Toronto 5

Canada





CANADIAN PUBLIC HEALTH JOURNAL

VOL. 29, NO. 4



APRIL, 1938

The Place of Mental Hygiene in Public Health*

B. T. McGHIE, M.D.

*Deputy Minister of Health and Hospitals
Province of Ontario*

IT is no longer necessary to defend the view that mental hygiene holds a place of importance in the field of public health. As one aspect of the complicated problem of keeping people well, mental hygiene is now generally recognized as a significant feature of modern hygiene whether in the field of public or private effort. The substitution of the medical concept "mental disease" for the legal term "insanity" represented something more than a polite gesture. Acceptance of the idea that mental and emotional disorders were "illnesses" in the medical sense of the term implied that they were due to understandable causes and were, therefore, open to investigation in the direction of both treatment and prevention.

In Ontario, the Department of Health is directly responsible for the maintenance, supervision and administration of the 13 Provincial Mental Hospitals. Under such an administrative arrangement it is natural that the problem of mental disease should be regarded as essentially a public health problem. Applying in this field the same approach which has proved so useful in other fields of public health work, it followed that attention should not be paid exclusively to the remedial treatment of those who are ill, but that due emphasis should be placed on the preventive treatment of those who may become ill.

The shifting of emphasis from treatment to prevention seems fully justified, not only by the success attained in other fields of public health, but by the available evidence in respect to mental disease. Our traditional pessimism regarding the inevitability of mental disease was based on what has been described rather

*Presented before a meeting of the Section of Preventive Medicine and Hygiene and the Section of Neurology and Psychiatry, Academy of Medicine, Toronto, March 24, 1938.

aptly as "the doctrine of eternal damnation through heredity". This excessive pessimism has given way, in recent years, to a moderate optimism regarding the possibility of prevention. Whatever hereditary factors may be involved in the development of either a mental or a physical disease, it seems evident that the actual occurrence of such a disease usually depends on the presence of injurious environmental conditions which are open to constructive attack. Certainly, in regard to those mental diseases which contribute most heavily to our mental hospital population, there is already sufficient evidence to indicate the value of preventive treatment and to warrant a serious effort in this direction.

In accordance with the view that the problem of mental disease calls for a constructive public health effort in the community, a special field staff has been trained over a period of the last eight years and is now offering throughout the Province a consultation service to physicians in respect to mental health problems as they occur in the community. These travelling mental health clinics operate from centres in our mental hospitals and have as their major objective the early recognition and preventive treatment of those persons in the community who are showing indications of poor mental health. A special effort is being made to locate and treat children who are showing, to an excessive degree, the unhealthy personality trends which are known to be characteristic of those who later become mentally ill.

That this mental health clinic service has helped to break down the traditional isolation of the mental hospital is probably one of its most significant contributions. This field staff carries into the community a modern viewpoint in respect to mental disease and brings back to the hospital an awareness of mental health problems as they exist in the community. In every aspect of this work, the readiness of an informed medical profession to co-operate to the fullest extent in such preventive efforts has been a most striking feature.

It will be seen from this brief description that mental hygiene occupies a place of some importance in the public health program in Ontario. Yet such a description provides a very limited view of the true significance of mental hygiene in the field of public health. The responsibilities of a modern department of health are many and varied. Some division of these responsibilities is necessary in the interests of efficient organization. Thus there are, in Ontario, divisions within the Department of Health responsible for such aspects of public health as maternal and child welfare, industrial hygiene, tuberculosis prevention, communicable disease control and mental hospital services.

Although it is desirable, and even necessary, to have such administrative divisions within a department of health, it is neither desirable nor indeed possible to divide the health of a person into such neat categories. The fact is that no departmental division can afford to limit its attention to the one aspect of health in which it is particularly interested. Each division is concerned with some aspect of the health of a person, not with some detachable *part* of a person. Thus, each division is forced to recognize the significance of the mental health problems which are inevitably encountered in any branch of public health effort.

The suggestion that mental hygiene occupies a place of importance in the

work of each division is not offered as simply commendable in theory but as feasible in practice. Accordingly, it is proposed to illustrate briefly the manner in which mental health forms part of the responsibility faced by these divisions.

The Division of Maternal and Child Welfare faces problems in which the physical, mental and emotional aspects of health are interwoven in such a way as to defy separation. For instance, to regard childbirth as a purely physiological event, would be to ignore most of the health problems involved. The public health nurses employed by this division soon find that the problem of the expectant mother has important mental, as well as physical, aspects. The physiological changes which take place during pregnancy are inevitably accompanied by changes in attitude and emotional expression which are of the utmost importance to the health of the mother. The preparation of the home for the arrival of a new baby, involving as it does the development of healthy attitudes on the part of the other children, must receive intelligent attention. In fact, at every stage, proper protection of the health of the mother and the child demands an understanding of the factors upon which mental and emotional as well as physical health is based.

Parent education in respect to the proper care of the physical needs of the child has long been recognized as an important public health responsibility. To this end, instruction is needed in how to develop routine health habits, how to prevent unnecessary physical illness and how to protect children against communicable disease. It has become increasingly evident that assistance is also needed in respect to such matters as how to encourage healthy emotional growth and how to develop healthy habits of adjusting to difficulties in childhood in order to prevent unnecessary mental illness later.

This trend in the field of public health, toward a more comprehensive view of the health of the child, is paralleled by a similar trend in the field of paediatrics. The recent establishment of a mental hygiene clinic in connection with the Department of Paediatrics in the University of Toronto represents a major advance in giving due emphasis to this aspect of child health.

The Division of Maternal and Child Welfare works in close co-operation with the Department of Education in efforts to protect the health of the child in school. Some five years ago the present Chief Medical Officer of the Department, as director of this division, began an experiment in health education for teachers. Through the Department of Education, a course in the principles of health teaching was organized and offered as one of the optional summer courses. This course rapidly became popular, and revealed the presence of a serious interest in preventive health activities among a group of persons who are strategically situated and capable under guidance of making a valuable contribution to the health of the community.

As a result of this experiment, and the work of a joint committee from the Departments of Health and Education, a teachers' Manual in Health Education is now being prepared. It is of interest that both in the summer course and in this manual, due emphasis has been placed on the significance of mental and emotional factors in health.

The mental health clinics, which are operated as out-patient services from our mental hospitals, have been assigned, for the direction of their work with children, to the Division of Maternal and Child Welfare in order to insure a proper co-ordination among the various school health services in the community. Such co-ordination is demanded by the fact that the physical and mental aspects of the health of the child are inseparable.

It might be supposed that the Division of Industrial Hygiene would be concerned almost exclusively with the enforcement of regulations designed to protect the physical health of workers. Such is not the case. There may have been a time when the employer of labour could know his men personally and concern himself directly with their individual problems. Today, such a personal relationship is usually impossible. The executive officers of a factory must think in terms of production and sales, and they are usually forced to leave to others the problems of personal adjustment.

They cannot fail to be concerned, however, over any conditions which bring about inefficiency in operation, injuries to employees or occupational diseases due to the nature of the work. It has become increasingly evident in modern industry that not all inefficiency can be cured by a time study, not all accidents can be prevented by mechanical safety devices, and not all occupational illnesses are organic in nature. Just recently, for example, the Division of Industrial Hygiene has been called upon to study a factory situation with a view to determining what factors are responsible for the abnormally large number of "nervous breakdowns" occurring among employees in certain departments.

Conditions which are injurious to the health of employees not only mean unnecessary economic waste but serve to lower the morale of the staff. The personnel management and the plant physician are becoming increasingly aware of the practical significance of mental and emotional factors in the field of industrial health. It is no longer adequate for the plant physician to be able to recognize such gross neuro-psychiatric problems as epilepsy, neurosyphilis and brain tumour. The psychopathic types with their emotional immaturity and erratic behaviour present serious difficulties. The large group of psychoneurotics with their dizzy spells, pains in the back, insomnias and gastro-intestinal upsets call for a great deal of psychiatric insight.

Dr. Rosenfield, in the October 1937 issue of "The Human Factor", describes an ideal arrangement under which such problems are handled by a personnel division which includes both an industrial psychologist and a psychiatrist with broad practical experience. He quite properly points out that such an arrangement involves a degree of expense, which is, in most instances, prohibitive.

It seems evident that the plant physician with his intimate knowledge of the particular industry and the physical ills of the workers in that plant, is the best fitted to deal with problems of mental health when they arise. To do this effectively, his medical training must have been of such a type as to make him alert to the importance of psychological and psychiatric factors in the preservation of health.

In the Division of Tuberculosis Prevention, it has been observed that the

most successful superintendents of sanatoria are those who realize that the patients under their supervision require more than surgical, medical and nursing care. Just as the psychiatrist cannot afford to ignore tuberculosis in a patient who is mentally ill, so the mental and emotional condition of the tuberculous patient must not be ignored by the specialist in this field. There is little doubt that those sanatoria in which a careful study is made of the personality of the patient, at least to the extent of determining his aptitudes and ambitions, are in a much better position to contribute to the health of the patient. Since mental and emotional attitudes play such an important part in facilitating or retarding improvement in other illnesses, it is not surprising that they are significant here where the co-operation of the patient in treatment is so necessary.

The place of mental hygiene in dealing with the problem of tuberculosis is especially prominent in connection with the re-establishment of convalescent patients. The Wisconsin State Report for 1937 points out that only about one-quarter of the tuberculous patients in State sanatoria have gone beyond the 8th grade in school and concludes that these patients require "more intensive vocational counselling" based on an accurate determination of their abilities and aptitudes in order that, upon their return to the community, they may be placed at types of employment which are suitable both in respect to physical health and personality adjustment.

Certainly the question of whether the improvement achieved by sanatorium treatment will be maintained after the patient's discharge, will depend in large part on whether he can be re-established at suitable work and can develop a healthy attitude toward his illness. The maintenance of a healthy regime without unnecessary hypochondria constitutes an important problem of considerable difficulty.

From the examples cited above, it will be evident that mental hygiene has a legitimate and important place in every branch of the public health field. It is of interest to note that even in such an apparently remote field as that of communicable disease, the recent outbreak of poliomyelitis provided ample evidence of the importance of mental hygiene in dealing with the problem of the after-care of patients recovering from paralysis.

In conclusion, it may be said that mental health problems are encountered in every branch of public health work. They cannot be regarded, therefore, as the sole concern of psychiatrists. Such problems must be recognized by the physician as an intrinsic part of his responsibility to the patient, no matter in what branch he may be specializing. It has been our experience that the readiness of the medical profession to do this is limited only by the extent to which they appreciate the significance of mental and emotional factors in the preservation of health. Thus, the place of mental hygiene in the field of public health depends ultimately on the extent to which mental hygiene is given due emphasis in the training of medical students.

Muscle Conservation and Re-education in Post-Poliomyelitis Paralysis

GEORGE A. RAMSAY, M.D., F.R.C.S.(C.), F.A.C.S.

AND

ROBERT A. JOHNSTON, M.D., F.A.C.S.

Department of Surgery

University of Western Ontario, London

THE presence of acute poliomyelitis in any community immediately places a responsibility on the medical profession that is far-reaching in its relation to human activities. The disease receives much publicity when the outbreak is at its height, with daily reports of an increasing or diminishing number of victims, but is soon forgotten when the epidemic is over.

The post-isolation and convalescent stage of the disease that immediately follows freedom from isolation is a very important one from the standpoint of diagnosis of slight paralysis, and for the treatment of those cases in which paralysis has developed. It is in this stage of the disease that arrangements must be made for the long and painstaking care that is necessary to assure as complete recovery as is possible in the muscles that have been affected. This care is a special field in medicine and the fact that orthopaedic facilities are now provided for all, is a tribute to organized medicine and the Government of Ontario.

Early adequate treatment of paralysed extremities does much to prevent deformities and hasten and encourage recovery in affected muscles. From the first recognition of paralysis, proper splintage is necessary. This places the responsibility for the diagnosis on the attending physician. If proper splintage is not used from the commencement, deformities will occur which will hinder the natural recovery that might take place in the affected muscles and these will require multiple operations to correct. Many cases of scoliosis, contracture of the hip and knees, and deformities of the feet that have taxed the ingenuity of orthopaedists to correct and cost many thousands of dollars in hospitalization might have been prevented by proper splintage applied from the very commencement of the paralysis. In the past, this neglect of early treatment has been evident. Sometimes the responsibility lies with the parents, sometimes with the physician.

DIAGNOSIS OF PARALYSIS

The onset and the nature of the extent of the paralysis in poliomyelitis vary, but generally paralysis occurs during the febrile period, most often within forty-eight hours of onset. Cases occur where the paralysis does not appear for several days, and in some cases continuous spread of the paralysis occurs involving the

respiratory muscles and causing death from respiratory paralysis unless mechanical respirators are used.

In some cases the symptoms of the infection have been so slight that it has not been recognized as poliomyelitis until a limp or deformity draws attention to the child.

There have occurred cases of "missed diagnosis" of paralysis in patients who have been discharged from the hospital at the termination of the isolation period. After the child has been at home a few days and walking attempted, a limp has been noticed. This teaches two lessons: firstly, it may be difficult to diagnose some moderate degree of paralysis while the child is in bed and the muscles are still in the "tender stage" or still sore from intramuscular injections of serum; secondly, it is improper to commence walking so early. If the child is permitted to walk too early, harm may be done to the weakened muscles and the parents and the patient may see little reason to carry out the long-continued supervision that is essential to successful treatment. No patient should be considered fully free from the possibility of paralysis until at least six weeks have elapsed. A statement that the child has no paralysis should be made only after careful, complete muscle-testing and examination of the fully-stripped patient. Even then, the diagnosis of muscle weakness of the back muscles cannot be made in all cases and the possibility of the development of scoliosis must be remembered.

Paralysis is evident in the extremities when the majority of the muscles of the limb are affected but is more difficult to determine when only certain groups of muscles are involved and the paralysis is not complete. The limp, flaccid lower extremity, usually externally rotated, with a marked foot drop and straight knee which the patient can move only slightly or not at all, is characteristic of severe paralysis of all the muscle groups of the limb. However, all muscles may not be involved in the paralysis and only certain movements of the extremity may be lacking. The location and degree of paralysis may be assessed by careful and repeated examination of all the muscles of the extremity and a mental comparison made with the strength and capabilities of corresponding muscles in a normal child about the same age.

EARLY METHODS OF MUSCLE CONSERVATION

Early in the 1937 epidemic of poliomyelitis in Ontario it was agreed by the surgical staff of the War Memorial Children's Hospital, London, that orthopaedic consultation should be given in all cases, and that all patients should be nursed on Bradford frames or, failing this, that a fracture board should be used on every bed. The early application of leg and arm splints was also recommended and the danger of "missed diagnosis" of paralysis of the back muscles was emphasized. Daily rounds of the wards, with re-examination of patients suspected of developing muscle weakness and a careful appraisal of new admissions, did much to stimulate all concerned in the treatment of the patients and in reporting any new development in regard to potential or developing paralysis.

The first wave of cases taxed the staff and equipment to the extreme. At that time there had not been developed the uniform splint that was adopted immediately following the Toronto conference. Within twenty-four hours after this agreement had been reached, we were able to supply immediately a uniform and suitable splint to every case that showed paresis and weakness. The interval preceding this required considerable effort to adapt available apparatus and supplies to meet the requirement of paralysed limbs. We wish to acknowledge and commend the concerted efforts of the physicians and surgeons who evolved the uniform type of splint and other apparatus that has made the management of poliomyelitis a much easier problem.

Immediate support of paralysed muscles during the first few days of the paralysis was obtained by using sand-bags of various shapes. These were used to support the feet in cases of foot drop and to prevent rotation of the extremity where the hip muscles were involved. The knee was kept slightly flexed by means of a pillow. The square type of sand-bag was used to maintain abduction of the arm from the trunk in deltoid paralysis. Care of the elbow was arranged in the same manner—determined by the location and degree of paralysis in the posterior and anterior muscle groups. This type of treatment was used in patients with severe grades of muscle tenderness and hyperaesthesia. In other cases, where the muscle tenderness was not so marked, plaster-of-paris moulded splints were used for the legs. These could be made quickly and when well padded and properly moulded afforded a very efficient preliminary support for the lower extremity. A small board incorporated horizontally at the heel prevented rotation. These moulds extend from mid-thigh to the toes, with the knee slightly bent and the foot at right angles.

MODIFICATIONS IN SPECIAL CASES

Two of our early cases developed marked paralysis of the muscles of the back. Anterior and posterior plaster shells were made for these and solved the problem. This was quite in line with our previous experience in cases of this kind and so far as can be ascertained, is the only comfortable and acceptable manner in which to treat patients who develop paralysis of the back muscles. The posterior shell is made first and as quickly as possible. When the anterior shell is completed, the patient can be turned and care of the back is possible.

The problem of supporting the arms was a difficult one and later the use of a narrow Bradford frame to which an arm splint could be fastened was adopted with notable advantage. There is always to be considered the "other muscles"; *e.g.*, with the elbow at a right angle, the biceps brachii is relaxed and this would be correct if the biceps above were affected. Often the triceps is involved and a change of position to relax this muscle is necessary. The same is true in the case of the deltoid and the pectoral muscles: when one is relaxed, the other is stretched. In these circumstances the most important muscle is favoured, the deltoid being considered of greater importance since it is essential for the proper use of the arm.

At the wrist the splintage is applied to support the weakened and paralysed muscles. Here, the question of flexors and extensors arises and the cock-up or the straight position is used. In regard to the hand, the problem is more complicated but it may be said that the thumb should be favoured and it should be held in a plane different from that of the palm of the hand. The position of the fingers will depend on the condition of the intrinsic muscles of the hand.

It was our aim in the early treatment of paralysis to make the patient as comfortable as possible, having due regard to the necessity of early splintage. Warm and comfortable coverings for the extremities and well-fitting splints accomplished this. Re-examination and indiscriminate movements at various times were not allowed except when the necessity arose. As soon as muscle tenderness disappeared, passive movement of the joints of the extremity, through their normal range of motion, was permitted morning and evening. Some question as to the advisability of this arose but the general opinion was favourable since it prevented rigidity developing in the immobilized joints.

At the conclusion of the isolation period, all paralysed children were transferred to the War Memorial Children's Hospital and the care of the convalescent stage began.

THE CONVALESCENT STAGE

When paralysis occurs in the acute stage, the paralysis is flaccid in type and may involve any muscle group. The paralytic condition results from the injury or destruction of the anterior horn cells. During the three weeks of isolation, the repair of the damaged nerve tissue proceeds. Cells that were severely damaged are not restored and are replaced by scar tissue. In attempting to restore function to muscles it is essential to remember that the muscle and the nerve are one unit. The muscle can be seen but the nerve is hidden. The nerve, however, is the essential consideration in muscle re-education.

Muscle contraction results from an impulse from more than one nerve centre. Hence in the average case it can be assumed that some of the nerve centres have escaped and are still capable of functioning. Further, it may be assumed also that there is a potential of natural recovery even in the "nerve-muscle" temporarily paralysed. Massage and bathing assist in increasing the circulation and lymph drainage, thereby improving the nutrition of the affected tissues. It is possible, through muscle re-education, to obtain the co-ordination of nerve centres, permitting the patient to establish voluntary movements.

Initial Procedures

The patient with paralysis, having been placed on a Bradford frame, with splints as required, is transferred from the isolation ward to the general ward or to his home. If the upper extremity is affected, the arm-shoulder splint counteracts shoulder sag and internal rotation. The continuing use of splints is essential in order that fatigue of the affected muscles may be avoided and overaction of the unimpaired opponent muscle is equally important. Rest is dependent on muscle balance. This muscle balance is not the normal reflex

balance but the equalizing of unequal forces in a manner similar to that employed by a teamster who can favour the weaker horse by a longer leverage of the double-tree.

When the details of nursing care are arranged and the patient is comfortable in his new surroundings, a careful examination and stock-taking may be made. This may require several visits of the physician since it is essential that the patient be not fatigued. An examination each month is desirable for four months and thereafter every two months for the remainder of a year. This plan is necessary since in the recovery stage changes in the balance of muscle groups occur constantly. A suitable record form should be used. Copies of the form which has been found satisfactory can be obtained from this hospital. The condition of the muscle is designated as normal, partially paralysed, and completely paralysed.

The examination should be made in a warm room. Good light is essential in order to observe the play of the muscles. The child should be stripped. The purpose of the examination is to reveal what the patient can voluntarily do in response to requests that exhibit the function of each joint. A general idea of the motive power in groups of muscles is thus obtained. The most important objective in the examination is to determine which muscle functions are weak and require protection by splinting against stretching by other opposing and unparalysed muscles. Weakness of the intercostal muscles may be readily overlooked. Weakness of the erector spinae muscles of the back and of the abdominal muscles may not be detected. In fact, no one can be certain of the integrity of the muscles of the back before six months of recumbency has elapsed. In the hand the opponens muscle of the thumb is frequently affected, while the fingers and the muscles of the lower arm show weakness less often, in contrast to the shoulder and deltoid muscles which are frequently involved. In the lower extremity, the muscles bearing weight are prone to suffer; namely, the muscles of the pelvis and the leg muscles.

In giving rest and protection by splintage, the muscles that are most important in maintaining the erect position—namely, the extensor muscles of the hip, the knee extensors, the abdominal and spinal muscles, and the calf muscles—are given preference; and in the arm and hand, the abductors of the humerus, the wrist flexors, and the abductors and extensors of the thumb.

It is important to remember that any mild cases in which there was little evidence of paralysis of the lower extremities while in bed, may exhibit definite evidence of weakness when allowed to walk. This may be shown by an uncertain, stumbling or even limping gait. Such a condition is a direct and immediate indication for a return to the Bradford frame with splints.

The treatment in the convalescent stage begins with the disappearance of muscle tenderness and the feeling of apprehension on the part of the patient. The objective is to obtain the maximum improvement in muscle function through re-education of the weakened muscles. Rest, as during the acute paralytic stage, is of first importance and unless the muscle receiving gentle exercise shows continued increase in voluntary power, it should be discontinued as it is evidently

too soon for exercise. The exercises must be planned to counteract the tendency of the child to use the strong muscle and neglect the weak one. In most cases this duty falls on the parents and they in turn must be instructed by the physician.

PRACTICAL DETAILS OF MUSCLE RE-EDUCATION

The patient should never be left to his exercises alone, even when he understands his condition. The value of the stimulus of a command is evident. If voluntary movement is not possible following the command of the physician, then the physician assists the patient to complete the movement to the full extent of his ability. The person directing the exercises should continuously encourage the patient, creating confidence in his ability ultimately to regain his power. Faith and enthusiasm are team-mates.

While the patient is performing the exercises, the paralysed limbs are uncovered in order that the action of the muscles and tendons may be seen and felt. A table or other hard, smooth horizontal surface, preferably not the floor, is necessary for the proper performance of the exercise, as it reduces the resistance of friction and enables a weak muscle to perform movements which would be impossible on the soft, yielding surface of a bed. The table should be sufficiently wide to allow the full sweep of the leg in hip abduction when the patient is lying on the back or hip flexion when lying on the side. In some cases movements can be made more easily in warm water or in warm salt water which possesses increased buoyancy. It is usually best, however, to do the real training on the table where the motion and the position can be accurately supervised, leaving the water exercises for patients who have learned the movements which they need to practice and know at the same time those which they should avoid.

During exercises the whole attention of the patient is required, for otherwise his ability to use his muscles will be underestimated and the exercises less effective. No person except the one who directs the exercises should be present. The presence of other children should not be permitted and no toys should be allowed. If the parents are ingenious, the exercises may be turned into an interesting game without making any sacrifice of precision in performing them.

Suitable exercises have been carefully arranged for use in treatment. The authors will be pleased to supply copies of these exercises, suitably described and illustrated by sketches. The list of exercises allows for the selection of muscle re-education that fits the particular case and also the intensity of resistance that will be indicated in the recovery stage. The exercises include those designed for the muscles of the trunk, including the flexor and extensor muscles of the spine and the lateral flexors of the spine; the lower extremity, including the thigh, the leg and the foot; and for the upper extremity, including the shoulder girdle and the upper and lower hand. Exercises suitable for the weakest muscles are given first, followed by those that require greater strength.

In selecting exercises for each patient, each group of muscles must be tested to determine what it can do and given as hard an exercise as it is capable of performing without fatigue. As soon as the muscles gain strength, the exercise

next in order of strength should be undertaken. The strength of the muscles may be roughly determined according to the amount of response which they are capable of overcoming and classified as follows: (1) normal muscle, (2) muscle capable of overcoming gravity and outside force, (3) muscle capable only of overcoming resistance of the joint and of the table, (4) muscle capable of overcoming gravity alone, (5) muscle incapable of producing movement but showing contraction, and (6) totally paralysed muscle showing no tightening of tendon or muscle belly.

Such a classification furnishes a simple means of recording progress. If the knee can be extended while the patient lies on his side, the condition of the quadriceps may be recorded as class 4. If later it can be extended when the patient sits on the table with his legs hanging down, the condition would be recorded as class 3.

In every case where the person directing the exercises resists with his hand the action of a set of muscles, he should be careful to graduate his resistance from weak at the beginning of the movement to strong at the middle and to weak again at the end of the movement in accordance with the change in leverage that takes place. The resistance at every point should be just a little less than would stop the movement. It is time to begin resistance in any given exercise when the movement can be performed freely without resistance to its fullest extent. All movements should be carried smoothly through the full arc of motion and assistance given at the end when the patient cannot complete the arc himself.

The exercises are best employed daily for six days a week. The omission of one day prevents monotony. Each exercise may be performed ten to twelve times in succession, with several pauses between the movements to prevent fatigue. In this way every movement is done as strongly as the first.

When contractures of joints exist, they should be corrected before exercises are attempted, since a weakened muscle kept on the stretch through contractures cannot be strengthened until the resistance is removed. In all exercises and positions the stretching of weakened muscles is to be carefully avoided.

THE AMBULATORY CONVALESCENT STAGE

Later, when the patient is permitted to move around, in addition to the initial splints, braces of the ambulatory type are required. Such braces, although cumbersome, are accepted by the patient as the lesser of evils since they prevent the acquiring of a mal-position of the limb or body, with a consequent greater crippling. Braces prevent the over-stretching of weakened muscles and safeguard the child through the stage of bone growth until the time when stabilizing operations and other elective operative procedures may be undertaken. It is to be remembered that splintage, when required, is indicated even more at night than in the day.

Massage is the desire of every parent but, as previously stated, it may do a great deal of harm, if not properly used. At best it can only aid by increasing

the blood supply. The use of electricity as a muscle stimulus has no place in the treatment of early cases, and in the convalescent stage fatigue can result from its use. Only very occasionally is use made of this form of exercise and only by an expert.

Unassisted walking in the first year is dangerous. Too early weight-bearing seems to be responsible for changing many a partially paralysed muscle into a completely paralysed muscle. Where the glutei or the quadriceps muscles are weakened, unassisted walking can only result in disaster. If there has been any degree of involvement of the muscles of the back, at least six months is required in the recumbent position on a Bradford frame. Before any attempt is made at sitting up, standing, or walking, the gluteal and spinal groups of muscles must be carefully examined and the decision made that they have reached as full a degree of recovery as is possible.

SPECIAL MEETING OF THE SECTION OF VITAL STATISTICS AND EPIDEMIOLOGY

Ottawa, Thursday, June 16th

IN order to permit of a conference with members of the Department of Pensions and National Health and the Dominion Bureau of Statistics, the Council of the Section of Vital Statistics and Epidemiology has arranged a special meeting of the Section to be held in Ottawa on June 16th. The holding of the meeting on this date is particularly fortunate in that the members of the Dominion Council of Health, which will be holding its sessions in Ottawa at that time, will be able to attend. It is expected that all the Provinces will be represented. This meeting of the Section will precede the annual meeting of the Association, which will be held in Halifax commencing Monday, June 20th. A meeting of the Section will also be held in Halifax at which a series of papers particularly relating to epidemiology will be presented.

The special Section meeting in Ottawa will receive the report of the Committee on the Registration and Certification of Stillbirths, and a further report on the new Canadian death certificate will be presented. Among the subjects for discussion will be the merits of the so-called confidential death certification. A report will also be presented of the findings of the committee on the classification of the causes of morbidity. As the program is of special interest to registrars of vital statistics and those actively concerned with statistical practice, the holding of the meeting in Ottawa will permit of a large attendance.

Survey of Tuberculosis Patients in the Home, Vancouver, B.C., 1936*

WM. MORRIS, M.D.

Tuberculosis Division, Provincial Board of Health of British Columbia

THE control of tuberculosis is no longer confined to the efforts of sanatoria. Clinics for the early diagnosis of tuberculosis have long been recognized as a twin requisite to adequate sanatorium accommodation. The clinics, first located in a sanatorium or in a centre of population, were soon supplemented by travelling clinics by which modern scientific equipment and expert advice were made available to the general practitioner and the patient in partially-settled districts. With the advent of collapse therapy these clinics, primarily diagnostic, became treatment centres. Sanatoria were able to discharge pneumothorax cases during the course of their treatment, and treatment could be continued in these diagnostic clinics. However, the treatment services of the clinics could be greatly increased, and the sanatoria could discharge collapse cases much earlier, if patients had suitable homes. The social and financial status of the patient constitutes the greatest problem in the control of tuberculosis. Expert medical diagnosis and equally expert medical treatment are not sufficient to control tuberculosis. Social diagnosis and social treatment are also essential. In this survey of the tuberculosis patients in their homes in Vancouver, stress was laid equally on the social and financial status of the patient and on the medical condition.

An integral part of the diagnostic clinic is the district nurse and she plays a very important part in the fight against tuberculosis. Vancouver is perhaps unique among the cities of the Dominion in that it contains fully half of the population of the Province within its metropolitan boundaries. This makes possible adequate clinic facilities and an efficient staff of district nurses. The organization in Vancouver is ideal from the standpoint of diagnosis. All contacts are examined periodically. Contacts both in the home and in industry are traced and examined. In addition, several complete industrial surveys have been made recently. Since 1934 children have been tuberculin-tested when first entering school, and the families of all reactors have been examined as possible sources of infection. It is planned that pupils entering high school will also be tested. Thus the incidence of infection that can be followed from year to year will be obtained. It will also provide an efficient method of case-finding by tracing the sources of infection.

From a therapeutic point of view the clinic serves as a refill centre for all pneumothorax cases who are discharged from institutions. An important service which the clinic renders in Vancouver is the providing of initial pneumothorax

*The services under the different departments mentioned in this article have been greatly augmented since the survey was made.

treatment at home for those patients who cannot be admitted to a sanatorium when diagnosed and who are a continuous source of infection to others at home. Moreover, the opportune time for collapse treatment may pass. A social-service worker for the district is indispensable to the proper control of tuberculosis in the home.

SURVEY FINDINGS

The total number of patients surveyed was 1,269. Four hundred of these are not included in the analysis; 180 being suspects only, 150 having juvenile A and G lesions, and 69 being pulmonary cases for which detailed information was not available. The remaining 869 were pulmonary cases and were studied in their homes. Of these, 437 were males and 432 females.

Marital State. There were 209 fathers (24.6 per cent.), 209 mothers (24.6 per cent.), 200 dependents (23.7 per cent.) living with parents, and 229 (27.1 per cent.) single men and women living in boarding houses.

Race. Of the 869, 613 (71.5 per cent.) were British; 52 (6.1 per cent.), Scandinavian; 60 (6.9 per cent.), Japanese; 43 (5 per cent.), Chinese; 4 (0.5 per cent.), East Indian; and other races, 86 (10 per cent.).

Age-Groups. 0-9 years, 20 (2.3 per cent.); 10-19 years, 65 (7.6 per cent.); 20-29 years, 249 (29.5 per cent.); 30-39 years, 189 (22.5 per cent.); 40-49 years, 157 (18.6 per cent.); 50-59 years, 118 (13.9 per cent.); 60-69 years, 40 (4.8 per cent.); 70 years and over, 7 (0.9 per cent.). It will be seen that the greatest number was in the age-group 20-29 years and that 52 per cent. of the patients were in the age-group of 20-39 years.

Length of Illness. The total number of months of illness was 34,130, an average of 39 months per patient. Of these patients, 332 (38.7 per cent.) had been in an institution. The average length of stay per patient was 15½ months and on an average each patient was admitted 1½ times. Of the total number of months of illness (34,130), only 5,152 (15.1 per cent.) were spent away from home. The length of time since discharge of these patients averaged 25 months.

Diagnosis. Of the group, 172 (22.5 per cent.) were classified as far advanced, 191 (24.9 per cent.) as moderately advanced, and 354 (46.3 per cent.) as minimal. Ten (1.4 per cent.) had tuberculous effusion, and 38 (4.9 per cent.) were juvenile B and C. There were 155 patients (17.9 per cent.) with positive sputum.

Collapse Therapy. Pneumothorax had been performed in 134 patients (15.4 per cent.) and refills were received at the clinic. There were 11 patients who had had thoracoplasty.

Present Condition. Apparently cured patients numbered 209 (28.7 per cent.); arrested, 189 (25.9 per cent.); quiescent, 133 (18.2 per cent.); active, 199 (27.2 per cent.). Of the active cases, 118 were classified as fair, 52 as ill, and 29 as terminal.

Present Status. Mothers able to do their own housework were classified as working. Of the group, 378 (43.5 per cent.) were working and of this number 131 (34.5 per cent.) were mothers. Seventy-six (20.1 per cent.) of the fathers

and 92 (24.3 per cent.) of the single men and women were working. Of those who were working, 95 had been in an institution and 176 had not. In addition, there were 93 patients (12 per cent.) who were able to do some kind of suitable work. Of the total number, 69 were strictly bed-patients and 273 were on full or part-time exercise. It will be seen that of the 199 active cases only 69 were confined to bed, the reason being that the others had to be up and helping themselves because of their financial position.

Finances. Two primary groups were made, those having independent finances and those on relief. Each group was subdivided into adequate and inadequate financial support. By "adequate" was meant the minimum of necessities for a patient to maintain health. "Inadequate" was defined as not providing even the minimum standard. Data relating to the group are as follows:

Five hundred and fifty-two (67 per cent.) had independent finances. Three hundred of these (54 per cent.) were considered adequate. The remainder, 252 (46 per cent.) had resources that were totally inadequate for proper health. Two hundred and fifty-seven were on relief (33 per cent.). Of these, only 92 (36 per cent.) were "adequate". The remainder, 165 (64 per cent.) had entirely inadequate resources. Taking the two groups together, there were 407 patients (almost 50 per cent.) who had entirely inadequate financial resources on which to maintain themselves.

Housing. The importance of proper housing in the treatment of tuberculosis needs no emphasis. The survey showed that 588 (74.4 per cent.) had housing that might be considered to meet a minimum requirement. However, 202 (25.6 per cent.) occupied homes which were entirely inadequate from the standpoint of satisfactory housing. There were an additional 62 homes in which there were social problems not related to finances or housing. With these tuberculous patients, living, as the majority of them did, in abject poverty in poor houses, were 2,877 other healthy persons, members of their families; 871 of these were children. There were 124 homes with more than one case of tuberculosis. Forty-eight cases had been recently diagnosed and were suitable for collapse therapy but could not be immediately admitted to an institution through lack of accommodation. In the meantime, the members of their families were being exposed to serious infection. Single men and women on relief suffering from tuberculosis present the greatest housing problem. They have to maintain themselves in rooming houses on an utterly inadequate allowance.

Complications. There were 22 patients with gross extra-pulmonary complications and 56 cases with non-tuberculous complications. The prognosis with a change of environment was considered favourable in 670 cases (77.1 per cent.); 251 (28.9 per cent.) were considered suitable for rehabilitation and vocational training.

Additional statistical data are of interest. This group of 869 patients received 3,254 examinations in the clinic. The district nurses made, on an average, 1,178 visits per month in the homes of these patients. In regard to medical supervision, 333 (38.3 per cent.) had their own doctor and 473 (61.7 per cent.) were dependent entirely on the clinic for treatment and supervision.

In 1935 there were 175 deaths in Vancouver from tuberculosis. Only 36 (20 per cent.) of these patients died in their homes. The other 80 per cent. died in institutions. To this extent the situation is more favourable than was reported in a general survey of sanatoria beds and tuberculosis deaths in the United States, where it was found that 80 per cent. of the deaths occurred at home and only 20 per cent. in institutions.

DISCUSSION

What is the solution? A great advance was made in the solution of the tuberculosis problem in British Columbia in the appointment, by the Provincial Government, of a medical director for the control of tuberculosis in the Province as a whole, thus unifying all the work of tuberculosis on the one hand and making tuberculosis control and treatment a government responsibility.

This unification has produced several major results. The most important was the recently erected tuberculosis building adjoining the Vancouver General Hospital. This building, besides adding 65 beds for the treatment of active cases, contains a fully modern clinic where 1,000 patients can be examined each month. The clinic provides a free service for the general practitioner, assisting him in making an early diagnosis. The clinic houses the Central Office, which administers the tuberculosis work for the whole Province. It provides quarters for the district nurses for Greater Vancouver and quarters for a social-service worker, as well as a fully modern X-ray department, dental clinic for in- and out-patients, and a heliotherapy room capable of treating 200 children a day. There are also quarters for the Lower Mainland Travelling Clinic. Complete records of the work of the Vancouver Unit are maintained, and adequate library facilities are provided for the staff. In addition to the 65 beds in the new building, the Vancouver Unit has taken over a convalescent home of 30 beds, and plans are ready for the building of a convalescent home of 100 beds for chronic cases which do not need active treatment but are infectious.

Another major accomplishment since the unification of tuberculosis work is the addition of two travelling clinics, one for Vancouver Island and the other for the interior of British Columbia. Three travelling clinics are now covering the territory which was previously covered by one. In addition, several part-time medical officers have been appointed at distant points who work in close co-operation with the central organization. These physicians give refills to discharged patients from sanatoria, thus allowing an earlier discharge than otherwise would be possible. They conduct tuberculin tests on all suspects, contacts, and school children.

All admissions throughout the Province are arranged through the Central Office, and the beds of all the different institutions are pooled, thus giving a better opportunity of utilizing the available beds immediately and eliminating all waste of time.

A vocational therapy unit for tuberculosis patients is now in the process of construction. The money for this building has been made available through

private philanthropy. This phase of the work is still in its infancy but we hope to develop it into an important link in the after-care of tuberculosis patients.

The newly-created Metropolitan Health Board substantially augments our district nursing service and it is hoped to have in the near future a more thorough supervision of all tuberculous patients in their homes. It is planned also to introduce initial collapse therapy for patients who cannot be admitted to institution immediately, thus treating actively every case as soon as it is diagnosed. To do this, however, adequate housing and financing of the patient, and adequate district nursing supervision, must be provided. Our greatest problem is to convince the proper authorities that tuberculosis patients must be provided with adequate living conditions if they are to improve or to remain improved after discharge from an institution. A great amount of money is spent on a patient while he is in an institution and practically nothing when he is out of it.

Twenty-five years ago the problem of control of tuberculosis centred in the general education of the public and the control of gross infection in the community. The campaign was of necessity general in character. Gross infection and gross ignorance and indifference are no longer the rule in civilized countries, and our efforts must be concentrated on a "mopping up" campaign. *Control of tuberculosis* should no longer be our slogan, but rather *Eradication of tuberculosis*. Tuberculosis is no longer widespread in any community, but is confined to what one may term "islands within". Intensive treatment, control, and supervision of these "islands within" should constitute our main campaign.

HOTEL RESERVATIONS IN HALIFAX

THE Local Committee on Arrangements desires to urge that members planning to attend the twenty-seventh annual meeting of the Canadian Public Health Association, which will be held in Halifax on June 20th-22nd in conjunction with the annual meeting of the Nova Scotia Health Officers Association, make hotel reservations at the earliest possible time. Requests for reservations may be addressed to the Chairman of the Hotel Committee, Dr. D. J. MacKenzie, Pathological Building, Morris Street, Halifax. The Lord Nelson Hotel is headquarters for the meeting. Information concerning hotel rates is presented on page 193 of this issue.

Vital Statistics in the Public Health Program*

D. V. CURREY, M.D.

Medical Officer of Health, St. Catharines, Ontario

WHILE municipalities have become more interested in the work of their health departments during the past few years, comparatively few medical officers of health have been in a position to take advantage of this interest since they were unable to present their work in a convincing manner, not having kept proper statistical records. Many health officers in Ontario appear to collect the essential data only on the occasion of making their annual report. Indeed, it is not unusual for medical officers of health to ask: "What use are statistics to me?" Sometimes we forget that public health work from its inception has been based on vital statistics. The "sanitary awakening" that occurred in England in the middle of the 19th century was due largely to Sir John Simon who, first as Medical Officer of Health of London and later as Medical Officer of the Privy Council, used the weekly returns of London and the statistical returns supplied by William Farr in the Office of the Registrar-General to urge the enactment of sanitary legislation. In that most interesting volume, "English Sanitary Institutions", Sir John Simon refers to his early use of the death returns:

"With regard to the main matters of duty, an essential basis for the officer's action was that he should learn at short intervals the behaviour of Causes of Death within the City; that he should watch the fluctuations of serious disease, as varying in different spots and at different times. . . . Punctually every Monday afternoon, as soon as the General Registration Office could spare those papers, they were placed at my disposal in a way which enabled me to complete my use of them during the evening; so that on the Tuesday mornings, when the weekly courts of the City Commission were held, I was ready with all needful particulars as to the deaths which had befallen the City population during the previous week, and with my scheme of such local inquiries as were to be made in consequence. . . . Even at our present time [1897] it is but very imperfectly recognized in sanitary administration, that an authority, set to diminish the diseases of a community, must begin by possessing itself of exact knowledge as to the local distribution of the diseases."

Ninety years have elapsed since the foundations of sanitary science were being laid by Simon. I wonder how many health officers to-day use the death certificates as he used them. Death returns form a very important source of information for the health officer in spite of the fact that, for certain diseases, morbidity reports reach the health officer in advance of the mortality returns.

*Presented at the twenty-third annual meeting of the Ontario Health Officers Association, Ottawa, June, 1937.

How accurate would our statistics be for tuberculosis, for instance, if we relied on the reporting of cases? Nearly every health officer has more deaths reported in his community from that disease than he has cases reported.

To the statistician, a discussion under the title of this paper would naturally seem unnecessary, and one can hardly believe that at this late day it should be necessary to urge health officers to keep proper statistical records in connection with their public health program. It is surely unnecessary to state that a public health program cannot be successful without the medical officer of health knowing what is going on and without careful study of the essential records of his community. In discussing statistics with health officers, however, I have found a great lack of interest. This may be due to the fact that comparatively few municipalities supply the medical officer of health with a proper office or clerical help. Without assistance it is, of course, very difficult to keep accurate statistics, but it is not impossible. During the past three years every medical officer of health in Ontario has been asked to present the statistical data of his annual report in the form of certain "standard" tables. Examination of the reports reveals that many of the statistical returns are incorrect and in others there are obvious errors. Sometimes no attempt is made to calculate the rates requested. To the health officers responsible for such faulty reports statistics cannot be of any real interest. We must realize that if statistics are incorrect, they are worse than useless. Vital statistics should have the same value for the health officer that symptoms of disease have for the physician. With proper statistics the medical officer of health should be able to see the public health problems as they exist in his community and decide what health work is most urgent. For example, if the tuberculosis morbidity or mortality rates are high, special attention to the prevention of this disease will pay big dividends. This was our experience in St. Catharines. A study of tuberculosis was made in 1919 and it was found that while the death rate in Ontario for this disease was 78 per 100,000 population, the rate in our city was 134. It was realized that active measures would have to be undertaken. A chest clinic was organized and subsequently a new sanatorium was built, with the result that our tuberculosis death rate has fallen until it is as low as that of any city of our size in Canada (table I).

TABLE I
TUBERCULOSIS, ST. CATHARINES, 1919-1936
(Residents Only)

Rates per 100,000 Population

Year	Population	New cases	Morbidity rate	Total deaths	Mortality rate	
					St. Catharines	Ontario
1919.....	19,095	—	—	24	130.9	78.0
1932.....	26,161	36	138	9	34.4	46.1
1933.....	26,394	45	171	12	45.4	41.5
1934.....	26,571	30	114	11	41.4	37.5
1935.....	26,854	25	94	4	14.9	36.5
1936.....	27,006	21	78	3	11.1	36.0

If the infant mortality rate is excessively high, the health officer must find out the causes and correct them in order to reduce the unnecessary loss of infant lives. To do effective work, however, proper birth statistics must be available, because these constitute the denominator for the study of infant deaths and if these are inaccurate he is unable to tell if the death rate is rising or falling because the rate for one year, in any community, may be influenced by many conditions and may not be a true index of conditions. Very often the health officer must prove to his board of health that he is doing efficient public health work. Accurate statistics will supply the proof.

To the epidemiologist vital statistics are essential. He depends on the records of the occurrence of cases during past years as well as the present. Many small outbreaks of disease may have been overlooked in the past, and large ones perhaps not recognized in their early stages because of lack of proper records or failure to utilize them. Successful epidemiology is dependent on accurate records.

In our public health education program the newspapers and the radio are used. Here proper statistics are of great value in interesting and instructing the public. Newspapers are quite anxious to publish local statistics that are of interest. If a newspaper is not interested, the health officer probably has not supplied accurate data in a reasonably attractive form. Practically all papers will publish weekly or monthly the number of births and deaths. It is wise to have comparative figures for the previous period or the cumulative totals for the year. Statistics for newspapers should be simple and it is not often that the press will publish tables.

Last year a study of a group of the smaller cities in Ontario was made by the writer and a report was presented at the annual meeting of the Ontario Health Officers Association. A similar study was undertaken this year. The use of the standard tables during the past three years has permitted comparison of the data of different municipalities. This is one of the valuable results of the use of these tables. The cities chosen in this study are those having a population of 30,000 or less. In each the medical officer of health serves on a part-time basis. Reference has already been made to certain "standard" tables for the presentation of vital statistics in annual reports. These tables were prepared by a committee of the Canadian Public Health Association's Section of Vital Statistics and Epidemiology after consultation with health officers throughout Canada. Not only have these tables proved to be of help to the health officer in preparing his annual report and in analysing the statistics so that the most important public health problems are presented, but their use has made possible for the first time comparable municipal health statistics. It is, of course, realized that comparisons based upon statistical returns are often unfair. Municipalities of widely different population-constitution, in regard either to age or race, or differing widely in the character of the occupations of its population, should not be compared unless these factors are considered. Standardized death rates, taking into account only the age-distribution, are being increasingly used since it is recognized that crude death rates are misleading.

In table II certain data relating to these cities are presented, the cities being

arranged in order of their population. In the standard tables, resident and non-resident deaths are clearly indicated. This is one of the most important values that attach to the use of these tables. Previously, comparison of infant and maternal mortality rates, tuberculosis mortality, etc., was not possible because there was no agreement in regard to the inclusion or exclusion of non-residents.

TABLE II
GENERAL MORTALITY RATES, BIRTH RATES, INFANT AND MATERNAL MORTALITY RATES,
AND COST OF HEALTH SERVICES
Cities of 10,000-30,000 Population
Ontario, 1936

Municipality	Population	Death rate (resident, per 1,000 pop.)	Birth rate (resident, per 1,000 pop.)	Infant mortality (resident, per 1,000 living births)	No. of maternal deaths (resident)	Maternal deaths, rate per 1,000 live births (resident)	Per caput cost of health services
St. Catharines..	27,006	8.8	15.1	57.1	1	2.5	37.8 cents
Oshawa.....	24,692	6.9	17.3	56.2	5	11.7	54.0 "
Sudbury.....	24,440	13.9	39.9	73.7	4	4.2	10.0 "
Kingston.....	24,372	11.2	18.0	31.5	0	—	12.0 "
Sault Ste. Marie	23,382	8.1	20.1	65.5	6	9.9	26.1 "
Guelph.....	21,175	10.4	17.4	46.0	3	8.1	31.0 "
Port Arthur.....	20,405	7.9	15.5	50.3	1	3.1	40.2 "
Timmins.....	20,600	10.2	33.0	113.2	4	5.8	48.0 "
Niagara Falls..	18,527	8.5	15.9	40.1	2	5.3	37.0 "
Sarnia.....	18,230	11.2	18.3	52.6	0	—	42.6 "
Stratford.....	17,615	9.4	8.7	37.4	2	8.2	35.0 "
Chatham.....	16,215	12.6	16.0	42.6	2	7.7	26.2 "
St. Thomas.....	16,128	11.2	10.2	84.9	1	3.7	52.0 "
North Bay.....	15,207	7.2	21.5	71.6	0	—	56.0 "
Cornwall.....	12,681	16.0	34.0	81.1	5	12.2	28.2 "
Woodstock.....	11,040	15.8	22.0	32.9	1	4.1	48.0 "
Welland.....	10,540	8.3	16.7	50.1	1	5.7	46.0 "

Striking differences in the birth rates are noted and, as the rates relate to residents only, these are significant. The infant mortality rates vary from 32.9 to 113.2. In general the infant mortality rate is higher in the cities having high birth rates. Comparison of the death rates cannot fairly be made even in this group of cities of relatively smaller size of population. Correction would have to be made for the larger number of persons in the older age-groups in certain of the cities. Other factors, such as the number of foreign-born in the population and occupation, might need consideration. The maternal death rate in several of the cities is much higher than in others. A careful study of the actual causes of these deaths would be necessary before any conclusions could be drawn. It is evident that the rates in seven of the cities are significantly higher than the rate for the Province as a whole.

Health Expenditures

It is impossible to compare the amounts expended by different municipalities in the maintenance of the health department, since expenditures are grouped under different headings and often large items are included for services that are not generally considered the function of health departments. In some instances

the school health program is charged to the local board of health, while in most places it is under the direction of the board of education and is not included by the health officer in his budget. In a general way, however, the data of table II permit of the statement that a city cannot expect to receive proper public health work at a cost of less than thirty cents per person, exclusive of the school health program.

There is an urgent need for a defining of those activities which should be included in the health department budget so that expenditures on health in different cities might be comparable.

Immunization

It is interesting to learn the extent to which the specific measures of prevention were applied in these municipalities during 1936. From table III it is evident that the medical officers of health are utilizing extensively diphtheria immunization and smallpox vaccination. The medical officer of health can consider his preventive work satisfactory only when the number of completed toxoid immunizations and successful vaccinations each year in the pre-school group is as great as the number of live births. Table III is arranged according to the total number of immunizations given.

TABLE III
IMMUNIZATION AGAINST SMALLPOX, DIPHTHERIA AND SCARLET FEVER
Certain Cities, Ontario, 1936

Municipality	Population	Live births	Diphtheria toxoid	Scarlet fever toxin	Smallpox vaccine	Total
Chatham.....	16,215	258	265	0	1,603	1,868
Oshawa.....	24,692	427	587	610	571	1,768
Sudbury.....	24,440	977	1,187	0	0	1,187
Timmins.....	20,000	689	455	0	663	1,118
St. Catharines.....	27,006	403	540	0	539	1,079
Sault Ste. Marie.....	23,382	470	512	125	150	787
Port Arthur.....	20,405	318	424	0	326	750
Welland.....	10,540	176	732	0	17	749
North Bay.....	15,207	327	126	10	592	728
Niagara Falls.....	18,527	295	389	0	290	679
Stratford.....	17,615	153	180	0	457	637
Sarnia.....	18,230	334	183	239	170	592
Woodstock.....	11,040	243	230	0	300	530
Kingston.....	24,372	441	275	20	22	317
Guelph.....	21,175	369	116	0	27	143
St. Thomas.....	16,128	165	0	0	68	68
Cornwall.....	12,681	407	0	0	0	0

SUMMARY

A proper system of recording and analysing vital statistics should be established by every health officer in order to permit him to conduct effectively his department. The standard tables prepared by the Canadian Public Health Association's Section of Vital Statistics and Epidemiology, which have been in general use by municipal departments of health for the past three years, are proving of definite assistance in simplifying statistical practice and in making available for the health officer essential data.

Trichinosis in Montreal*

J. H. GERVAIS, M.D., D.P.H.

Superintendent, Division of Epidemiology, Department of Health, Montreal

TRICHINOSIS has been infrequently reported in Canada. In 1908 a few cases were reported in one county of Quebec. In the United States, however, a series of reports has been published, which data have been summarized recently by Hall and Collins, indicating that in 1,778 autopsies, trichinae were present in 222. These include observations made from 1891 to 1937. Commenting on this evidence, these authors state that the percentage of positive findings, 12.5, is a conservative figure. They base their conclusions on a study of 300 diaphragms from cadavers from 10 hospitals in Washington, D.C., and one hospital in Baltimore, Md., in which trichinae were found in 41, an incidence of 13.7 per cent. In 1936 a similar survey was made by McNaught and Anderson in San Francisco, using a digestion method for demonstrating trichinae. They reported positive findings in 24 per cent. of the cadavers examined. If the recent findings in the United States reflect the actual incidence of trichinae infestation, the incidence must be very wide-spread. It would appear, however, that only a small percentage of patients infested with trichinae manifest clinical trichinosis. Hall and Collins conclude that the United States apparently has the greatest problem of trichinosis of any country in the world, a problem involving in one way or another and in some degree several million persons. If this is so among our neighbours, are we not justified in believing that trichinae infestation is more prevalent in Canada than the few reported cases would indicate?

OCCURRENCE OF CASES IN MONTREAL

Twice during 1935, in January and in November, the city health department was notified of the occurrence of cases of trichinosis in Montreal. The cases may be, therefore, considered in two groups: those occurring in January and those in November.

January Cases

On January 31, 1935, the medical director of one of the large hospitals in Montreal forwarded to the health department a report of the examination of the post-mortem findings of a child who had died on January 11. The child, eight years old and resident in Montreal, complained when in hospital of rheumatic pains and presented peculiar symptoms. An autopsy was permitted, and trichinae were demonstrated. The pathologist's report indicated that as innumerable trichinae were present in the tongue muscles, the onset of the infestation must have been three or four weeks previous. It was reported to

*Presented before the Section of Vital Statistics and Epidemiology at the twenty-sixth annual meeting of the Canadian Public Health Association, Ottawa, June, 1937.

the department also that there were five other members of the family who were ill, having shown similar symptoms during January.

Dates of the onset of illness among members of this family are presented in table I.

TABLE I

TRICHINOSIS IN FAMILY ARRANGED ACCORDING TO ONSET
Montreal, December 1934

Patient	Age (years)	Onset
Mother	42	Dec. 21
Child	13	Dec. 21
Child	3	Dec. 29
Child*	8	Dec. 29
Child	17	Dec. 30
Child	11	Dec. 30

*Hospitalized and died Jan. 11, 1935.

Investigation: Careful investigation was made to learn of the meat used by the family and the sources from which it was obtained. On the 17th of December, meat was purchased by this family at the public market from a farmer resident in the vicinity of Montreal. It consisted of sausages, black pudding, and fresh pork. Four days after the consumption of this meat, the first symptoms of sickness as evidenced by gastro-intestinal disturbance, occurred in two members of the family. After eight and nine days, similar symptoms appeared in the four other members. However, both before and after the 17th of December, fresh pork from different sources, as well as black pudding and sausages, had been purchased. Two of the patients did not eat sausages. It did not appear, therefore, that the sausages were solely responsible. The butchers supplying meat to this family were investigated and particular attention was paid to the farm from which the meat had been supplied on December 17th. Some hogs on this farm appeared to be sickly. Six specimens of meat were examined at the municipal laboratory but no traces of trichinae were found. Further, no cases of illness had occurred among the members of the family of this farmer who used their own supply of pork freely. The physician in the village reported no instances of suspicious symptoms among his patients; nor was any information supplied by neighbouring farmers which suggested the occurrence of trichinosis. Rats were not found in the local piggeries. The source of the trichinae was, therefore, not established.

Cases of October and November

In the latter part of October, a new outbreak of trichinosis appeared in Montreal. The first patients were diagnosed on November 6th at one of the large hospitals. The diagnosed cases had been under observation for a fortnight. Intensive investigation was made and additional cases were found, some of which were in the acute stage and others were recovering. As a result of the investigation, 68 cases were discovered. The dates of onset are given in table II.

TABLE II
CASES OF TRICHINOSIS BY DATE OF ONSET
Montreal, 1935

Date	Number of Cases	Date	Number of Cases	Date	Number of Cases	Date	Number of Cases
Oct. 15	1	Oct. 23	2	Oct. 28	5	Nov. 2	6
16	1	24	1	29	2	3	5
20	1	25	2	30	2	4	8
21	1	26	2	31	9	5	1
22	2	27	1	Nov. 1	3	6	7
						10	6
							68

The distribution by age is given in table III.

TABLE III
DISTRIBUTION BY AGE

Age	Number
0-9	4
10-19	7
20-29	12
30-39	25
40-49	15
50-59	2
60-70	3
Total	68

The distribution of cases in families is of interest. In table IV data are presented concerning 18 families in which two or more cases occurred.

TABLE IV
EIGHTEEN FAMILIES WITH TWO OR MORE CASES

Family No.	Members	Number of Patients
1	6	5
2	5	4
3	9	2
4	5	3
5	14	3 (10 taking their meals outside)
6	5	4
7	4	4
8	5	2 (3 taking their meals outside)
9	2	2
10	2	2
11	4	3
12	7	2 (5 taking their meals outside)
13	2	2
14	4	2
15	4	4
16	3	2
17	2	2
18	3	3

From table IV it is evident that in 9 families 2 cases occurred, in 4 families 3 cases, in 4 families 4 cases, and in 1 family 5 cases. In the remaining 17 families only 1 case occurred in each.

Investigation: When the data were collected, it was at once evident that

the majority of cases were among one group of German people. The consumption of raw pork products by them was general. Investigation showed that these persons were supplied largely by a butcher of the same nationality who had established a considerable trade in pork meat products. Eighteen different kinds of sausage were prepared by him. He supplied regularly several small food shops and also a dining club which was very popular among this group of German people. On November 8th the department of health took 16 samples of meat from this butcher shop, and submitted them to macroscopic and microscopic examination at the municipal laboratory. The samples were taken from various sausage preparations. Three, however, had been made with meat imported from western Canada. Subsequently 39 other samples of pork were taken, either directly from the shop or from the homes of patients who had purchased from him. Ten of these samples were taken from hams stored in cold storage. A total of 55 samples was carefully examined, but trichinae were not found in any. The examination was macroscopic and microscopic.

Tracing the supplies of meat which this butcher received, it was found that he had purchased supplies of pork on October 1st, 22nd, 23rd and 25th, from company A in Maskinonge, Que.; on October 8th, 10th and 16th, from company B in the Eastern Townships; on October 16th and 17th, from company C in the Eastern Townships; on October 22nd and 25th, from company D at St. Maurice, Que.; on October 29th a considerable quantity of meat had been purchased from a number of sources. Distribution of pork from shipments made on the same days to other butchers in Montreal was carefully traced. No persons were found to be ill among the customers of these firms. No history of illness suggestive of trichinosis was recorded, and family physicians knew of no possible cases in their practice in these localities. Every farmer was insistent that his hogs were not fed the remains of hogs that had been slaughtered.

SUMMARY

Two outbreaks of trichinosis in Montreal are recorded, the first in January 1935 of 6 cases and one death, and the second in November 1935 of 68 cases and no deaths. In neither epidemic was the source of the infestation found. The two outbreaks were unrelated. The second outbreak was limited to a group of people of German extraction who used various types of sausages which contained uncooked pork. Since many persons were known to have used the meat products from this establishment, the fact that only 68 suffered from trichinosis indicates that only a small amount of trichinae-infected pork had probably been used.

Recent Health Legislation in Canada

R. D. DEFRIES, M.D., D.P.H.
School of Hygiene, University of Toronto

ALTHOUGH medical officers of health are concerned primarily with the health legislation of their own Province, the perusal of changes in legislation in other Provinces is often helpful. During 1936 and 1937 important changes in legislation have been made by several Provinces.

BRITISH COLUMBIA

In 1936 the Public Health Act was thoroughly revised, the latest revision having been made in 1924. Of special significance was the authority given to municipal councils to form union boards of health. Section 46 provides that two or more municipal councils may unite their respective municipalities into one district and that the participating municipal councils may enter into an agreement with the boards of school trustees for the school districts concerned to permit the transfer to the union board of the carrying out of the health services as required under the Public Schools Act. Provision is made for the representation of the boards of school trustees on the union board. Under this enactment such a union was created of the city of Vancouver with North Vancouver and certain other adjacent municipalities. A Metropolitan Health Committee was created to provide for the needs of all the municipalities, including the city of New Westminster. If and when all the municipalities enter the union, 47 per cent. of the population of British Columbia will be provided with full-time health services under the Metropolitan Health Committee. The creation of this metropolitan area, with increased staff, was made possible by the generous contribution of the International Health Division of the Rockefeller Foundation for a period of five years, supplementing the municipal and provincial funds.

Important changes were made relating to the appointment, remuneration, and security of office of the medical officer of health. The appointment, remuneration, and dismissal of the medical officer are now subject to the approval of the Provincial Board. This provision improves greatly the status of the medical officer of health and prevents unfairness of treatment by municipalities.

In 1937 the status of sanitary inspectors received consideration and Section 45 was amended by requiring that no person shall be appointed to the position of, or act as, sanitary inspector unless he is the holder of the Certificate in Sanitary Inspection (Canada) or equivalent certificate issued by a competent authority which is acceptable to the Committee on the Certification of Sanitary Inspectors of the Canadian Public Health Association. Provision was made that this Section should not apply to any person who was duly appointed to the position of sanitary inspector by the municipal council or

Provincial Board and who held this position at the time of the enactment of this Section, namely December, 1937.

ALBERTA

Of particular interest was the passing of the Tuberculosis Act in 1936, providing for greater facilities for the treatment of patients and provision also for free treatment. This Act empowers the Minister of Health to take measures for the prevention of tuberculosis and the treatment of tuberculosis patients and for that purpose to operate the Central Alberta Sanatorium and, with the approval of the Lieutenant-Governor in Council, to acquire land, buildings and equipment as suitable for use for the hospitalization of tuberculosis patients, and to enter into agreements with boards of hospitals for the setting apart of any portion of hospitals for the reception, care and treatment of tuberculosis patients. By Section 4, persons who have been residents of the Province for twelve consecutive months out of the twenty-four months immediately preceding admission into any sanatorium operated by the Minister shall not be required to pay any fee for hospitalization or treatment therein; other persons are liable to pay such amounts for hospitalization and treatment as may be prescribed by order in council. Persons admitted to a hospital as tuberculosis patients under the provisions of the Hospitals Act are to continue to be subject to the provisions of that Act until such time as provision is made under the present Act for the transfer of such persons to a sanatorium under the provisions thereof.

The Hospitals Act was also amended in 1936, making new provision for the liability of a local authority for the hospitalization of its indigent sick residents. The local authority is liable for the payment of hospital charges of an indigent sick resident if the case appears to the superintendent or medical officer to be one of sudden and urgent necessity and if he notifies the local authority by registered mail of the admission. The case of an expectant mother, certified by the attending physician as requiring hospitalization, is declared to be a case of sudden and urgent necessity. The amendment also provides that in case of dispute the decision is to be made by the judge of the district court.

An amendment to the Municipal Hospitals Act was passed in 1936 restating the qualifications for election to membership of a hospital board and the assessing of taxes in certain instances. Certain changes were also made in the Solemnization of Marriage Act in 1936 and the Chiropractic Act was also amended. In the latter, an advisory board of examiners consisting of five members appointed by the Minister is provided, four of whom are to be registered chiropractors resident in the Province.

An important amendment was made in the Public Health Act in 1937 whereby the Minister of Health may constitute full-time health districts and appoint district boards of health to enforce the provisions of the Public Health Act and the regulations made thereunder within the district and to make provision also for a medical and sanitary staff consisting of a duly qualified medical practitioner, one or more sanitary inspectors, one or more trained

nurses, and a secretary, who shall devote their time to the health and sanitation of the district. It further empowered the Minister to prescribe the proportions in which the municipalities included in the district shall contribute to the cost of the operation of the district. One-half of the cost of the operation shall be paid by the municipalities that are wholly or partially included within the district in the proportions described by the Minister. Alberta has two full-time health units, the Red Deer Unit at Red Deer and the Foothills Unit at High River. This amendment will facilitate the establishment of additional units by more clearly defining the responsibilities and requiring that only one-half the cost of operation be paid by the municipalities.

The Public Health Act was further amended by inserting after Section 28 a new section prohibiting any person who is an optician, optometrist or chiropodist, or any other person who is duly licensed to diagnose or treat diseases, from advertising or holding himself out to the public as a specialist unless he holds a certificate as such from the Registrar of the University of Alberta certifying that he has complied with such conditions as to qualifications or fitness as may be prescribed by the Senate of the University. Alberta is the first Province to enact legislation defining specialists.

Four other Acts relating to health were amended. The Municipal Hospitals Act of 1929 was amended to provide that the Minister of Health may appoint a member of a hospital board for a municipality in case the council has been dismissed and an official administrator has been appointed in its place. An amendment to the Mental Diseases Act excludes an addict from the operation of Section 3 whereby an enquiry concerning persons who are mentally diseased and dangerous to be at large is initiated by proceedings before a Justice of the Peace. In the Mental Defectives Act the term "mentally defective person" is redefined as any person in whom there is a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by disease or injury. Provision was made by amendments to the Sexual Sterilization Act that patients in a mental hospital whom it is proposed to discharge, and persons who have been under treatment or observation at a mental hygiene clinic, may be examined by the Board. In the case of psychotic persons the sterilizing operation may be ordered where the Board is of the unanimous opinion that the exercise of the power of procreation would result in the transmission of disease or the risk of mental injury, provided that the consent which is necessary has been obtained. Similar provision is made in the case of mentally defective persons but in such cases consent is not now necessary. The Board and other persons are exempted from liability to civil actions in respect of anything done in good faith in purported pursuance of the Act. Sanitary regulations to auto-trailer houses were also adopted.

SASKATCHEWAN

In 1936 the Public Health Act was amended to affect the composition and duties of the Health Services Board established in 1934 and also to enable the Department of Public Health to control, in a given municipality, the sale of milk from sources outside the municipality. The latter amendment deals particu-

larly with tuberculosis, infectious bovine abortion, or any other diseases communicable to man.

The Venereal Diseases Act was amended to give the medical officer of health or the Minister authority over a person who has been exposed to infection.

The Mental Hygiene Act consolidated and amended former legislation, repealing the Mental Diseases Act, the Mental Defectives Act and part 4 of the Child Welfare Act. It placed the supervision of mentally ill and mentally defective persons under the Department of Public Health regardless of age or category. Mentally defective and mentally ill persons were given a more modern definition and provision was made for admission to psychopathic wards and also to approved homes when deemed advisable.

The Marriage Act amendments allowed persons under twenty-one, whose parents refused consent, to apply to a judge of the King's Bench in order that the latter, in his discretion, might grant an order dispensing of such consent. Previously this applied only to those between eighteen and twenty-one years. A new clause provided that licences might be issued or marriage banns proclaimed with respect to applicants under the age of fifteen if the applicant produced a medical certificate stating that immediate marriage was necessary in order to avoid illegitimacy of offspring, provided, however, that the other conditions for the marriage of minors had been complied with.

In 1937 the Marriage Act was amended to simplify the procedure of sending in forms to the Registrar General, especially when the same clergyman had proclaimed the banns and solemnized the marriage. Provision was also made for consent to the marriage of minors by the legal guardian or the parent having legal custody if the parents had been legally separated. Another very important amendment to this Act provided the annulment of the marriage of a minor under the age of fifteen by ruling of a district court judge if, after the ceremony, there had not been cohabitation.

Amendments to the Vital Statistics Act provided for registration in the father's name of children legitimated by the subsequent marriage of the parents when statutory declaration by both parents could not be obtained but the Registrar General was otherwise satisfied.

The Union Hospitals Act was amended to define more clearly those who might receive hospital care and treatment.

MANITOBA

In 1934 a new Public Health Act was passed which is of such character that amendments to it will rarely be required. In 1934 the regulations were consolidated and issued, together with the Public Health Act, in one volume. A number of minor amendments to the consolidated regulations were passed in May, 1936. Provision was made in the control measures for anterior poliomyelitis that a placard be placed on the premises when the patient remains in the house but not if the patient is removed to an isolation or other hospital. The patient is required to be isolated for three weeks after the onset of the disease, provided that all temperature has disappeared. Contacts are required

to be quarantined for fourteen days from the date of the exposure except in municipalities where full-time health departments are in operation, where such quarantine shall be at the discretion of the health officer. Food handlers shall not engage in their occupation within fourteen days of the last exposure to infection. A series of amendments was made relating to tuberculosis. Regulations were also promulgated concerning private boarding homes for aged or infirm persons. A revision of the regulations relating to full-time health districts was also made.

Regulations relating to workmen employed in certain industries where silicosis may be contracted were revised in 1937, as well as the regulations respecting industrial and construction camps. Minor changes were made respecting fumigation and smoke control, and bakeries and bake-shops.

New regulations were also passed in reference to ice, making provision that no person, firm or corporation shall cut, store, deliver, sell or offer for sale any ice unless a permit is issued by the medical health officer or Minister. Application for the permit must state clearly the proposed source of ice, method of handling, and facilities for storage.

Minor amendments were made to the regulations respecting full-time health districts, in order that the personnel of the units might be entitled to holidays with pay.

In 1937 regulations respecting the sanitary control of auto-trailer houses were made. As the regulations in Manitoba form the basis of the regulations adopted by other Provinces in dealing with auto-trailer houses, they are given herewith:

1. For the purposes of these regulations "auto-trailer house", hereinafter referred to as auto trailer, means a vehicle towed or drawn by an automobile or other means, and constructed and equipped for the occupation and comfort of persons while travelling from one destination to another.

2. Closets shall be of the removable receptacle type, flyproof, provided with satisfactory means for ventilation and of such construction as will permit of proper cleansing and disinfecting. Receptacles or containers for the retention of excreta shall be of substantial water-tight metal construction, provided with strong handles so as to facilitate removal for cleansing. Contents of containers shall be treated with suitable disinfectant or deodorant.

3. Sinks or other fixtures used for washing or ablution purposes shall be provided with removable water-tight metal containers for the retention of all liquid waste.

4. Closets, sinks, wash basins, or other fixtures which will or may permit discharge of liquid or solid wastes on to the ground surface are strictly prohibited. All waste material including garbage, refuse, slops, closet contents, etc., shall be disposed of in such a manner as will prevent nuisance or offence or the fouling of any water course or water supply.

5. At tourist camps, summer resorts, or other locations where trailers are permitted to park, adequate provision shall be provided for the sanitary disposal of all solid and liquid waste from trailers by burial or burning, or in such a manner as to prevent nuisance. The construction or use of a common collecting receptacle for the disposal of excreta or other waste is prohibited.

6. The use of closets, sinks, basins, or other fixtures in trailers, while parked in tourist camps or other locations in any city, town, or municipality, where plumbing fixtures and water supply are provided for use, is strictly prohibited.

7. No auto trailer shall be parked or located on any ground within the limits of any city, town or municipality to be used as a permanent or occasional place of residence. Any trailer so parked or used shall be subject to the provisions of all local by-laws and regulations, and the regulations under the Public Health Act.

8. Notwithstanding anything contained in these regulations, all auto trailers and their occupants shall be subject to the provisions of the regulations respecting disease control and any other regulations under the Public Health Act.

ONTARIO

During 1937 certain regulations respecting public hospitals were approved by the Lieutenant-Governor in Council, and an amendment to the Pharmacy Act, providing for the control of the sale of certain habit-forming drugs, came into force in May.

Under the Public Hospitals Act, regulations were approved dealing with matters pertaining to the medical and nursing staff and the professional work done in hospitals. It is required that the medical staff must hold a meeting once a month for a discussion of the professional work done in the hospital. It is required also that a practitioner who sends a patient to hospital is responsible for notifying the superintendent of any condition that would make such a patient dangerous to others. Fee-splitting is prohibited and no charge can be made for attendance upon indigent patients. With certain exceptions, all material removed at operations must be sent to a pathological laboratory.

It is provided also that orders for treatment must be in writing, or if given by telephone must be recorded and signed by the person receiving them. A complete case record is to be kept for every patient, and the records may not be removed or inspected except under certain conditions. Before a surgical operation can be performed, written consent signed by the patient or his legally qualified representative is required, except where delay would endanger the life of the patient. Two legally qualified practitioners must sign a recommendation before an operation is performed. It is required also that the case record must be completed before the operation, except in the case of emergency. A written description of the operation and a record of the anaesthetic must be filed by the attending surgeon.

Provision must be made for the isolation of patients suffering from communicable disease, and for the isolation and nursing care of maternity patients having puerperal fever. In regard to nursing care, each hospital must have a sufficient number of registered nurses so that at least one registered nurse shall be on duty at all times.

A consultation must be held on every indigent patient remaining in hospital for more than thirty days, by two or more members of the active staff.

The Pharmacy Act was amended not only to provide for the control of the sale of codeine, amidopyrine, and barbituric-acid compounds, but a schedule was added to the Pharmacy Act and the Lieutenant-Governor in Council may amend the schedule by Order-in-Council. When a drug is added to this schedule, it may not be sold by retail except on a prescription signed by a legally qualified practitioner, dentist, or veterinary surgeon. The schedule at present contains only three drugs: codeine and its salts, amidopyrine, and barbituric acid, and derivatives and combinations of either of them with other substances. Discipline of any medical practitioner, dentist, veterinary surgeon, or pharmaceutical chemist, who sells or prescribes an excessive, unreasonable, or improper amount of any of the drugs listed in the schedule, is provided.

NEW BRUNSWICK

The Local Sanitariums Act was amended, increasing the previous per diem grant of 75 cents to \$1.00 for each patient admitted on or after May 1, 1937. The burden of the care of indigent persons suffering from tuberculosis has been a heavy one for municipalities, and this further provincial assistance has been greatly welcomed.

The sections of the Health Act relating to vital statistics were revised in 1935. In 1936, the regulations respecting vital statistics, originally made in 1919, were revised. The sections of the Health Act relating to vital statistics and the regulations have been issued in a separate booklet.

As provided for in the amendment to the Health Act of 1935, Vital Statistics Regulations as amended in 1936 provide for the re-registration of birth of a child adopted under the existing laws of the Province and for the registration of birth of a child who may become legitimate under the Legitimation Act.

An important provision was made during 1937 for the dividing of the Province into ten health districts in place of five. The former Northern Health District has been divided into three: Madawaska, Restigouche, and Gloucester. The Eastern Health District has been divided into three: Northumberland, Kent, and Westmoreland-Albert. The Southern District has been divided into two: King-Queens and Saint John-Charlotte. The Western District consisting of Victoria-Carleton, and the Central District of Fredericton-York-Sunbury, are unchanged.

NOVA SCOTIA

The Solemnization of Marriage Act of 1923, together with amendments, was consolidated in 1937. An amendment was incorporated which provides a system of registration for all clergymen who wish to solemnize marriages within the Province. No marriage shall be valid unless it is solemnized by a person authorized under this chapter to solemnize marriages. The term "clergyman" includes any person authorized by this chapter and includes ministers or clergymen of a religious body and staff officers (male) of the Salvation Army. A list of the names of all persons who may solemnize mar-

riage, having been registered under this chapter, shall be published at least once a year in the Royal Gazette, and a copy of the list furnished to each issuer of marriage licences.

Following the consideration of the matter of standard provincial regulations for the transportation of dead bodies, amendments were made to the Public Health Act which formerly required the embalming of the body or the use of a metal-lined box if the body was to be transported beyond a distance of twenty-five miles. The standard regulations require embalming, or the use of a metal-lined casket, hermetically and permanently sealed, if the period of transit exceeds seventy-two hours from the time of death. In addition, a suitable outer box must be used.

Sanitary regulations respecting auto trailers were also adopted. These regulations were similar to those discussed by the Dominion Council of Health and enacted by other Provinces.

No amendments were made to the Public Health Act of Quebec or Prince Edward Island.

SUMMARY

Important changes were made during 1936 and 1937 in legislation in seven Provinces. Of particular interest was the provision in British Columbia for the creation of union boards of health, under which legislation the new Metropolitan Health Committee for Vancouver was established. Changes were made in the Public Health Act as relating to the appointment, remuneration and dismissal of health officers. Qualifications for sanitary inspectors were established. British Columbia is the second Province to require definite qualifications for sanitary inspectors, such a requirement having been made in Manitoba. In Alberta the Tuberculosis Act made provision for free sanatorium treatment, and the establishing of full-time health districts was facilitated by an important amendment to the Public Health Act. In Saskatchewan control of the sale, in a municipality, of milk from sources outside the municipality was vested in the Health Services Board, particularly from the standpoint of the control of diseases communicable to man. Among the regulations made under the Public Health Act of Manitoba was one relating to the sanitation of auto-trailer houses. This regulation formed the basis of similar regulations in other Provinces. In Ontario important changes were made in the Public Hospitals Act, including the requirement that all tissues removed at operation be submitted for examination in a pathological laboratory. By amendment of the Pharmacy Act, codeine, amidopyrine and barbituric-acid compounds can be sold only by prescription. In Nova Scotia, by an amendment to the Marriage Act, a system of registration for all clergymen who wish to solemnize marriages in the Province was provided. The legislation in New Brunswick reflects the important advances in that Province in health administration. The Province is now divided into ten health districts, each with a full-time medical director. The tuberculosis control program centres in these officers.

EDITORIAL SECTION

EDITORIAL BOARD

R. D. DEPIRES, M.D., D.P.H., *Chairman*
N. E. MCKINNON, M.B., AND J. T. PHAIR, M.B., D.P.H., *Associate Chairmen*
R. L. RANDALL, *Editorial Assistant*

GORDON BATES, M.D. A. E. BERRY, M.A.Sc., C.E., PH.D. J. CRAIGIE, M.B., CH.B., PH.D., D.P.H.
J. G. CUNNINGHAM, B.A., M.B., D.P.H. C. E. DOLMAN, M.B., B.S., PH.D., M.R.C.P., D.P.H. GRANT
FLEMING, M.C., M.D., D.P.H. D. T. FRASER, B.A., M.B., D.P.H. RONALD HARE, M.D. (LOND.). EDNA
L. MOORE, REG.N. E. W. McHENRY, M.A., PH.D. G. D. PORTER, M.B. A. H. SELLERS, B.A., M.D.,
D.P.H. F. O. WISHART, B.A., M.D., D.P.H. J. WYLLIE, M.A., M.D., CH.B., B.Sc., D.P.H.

PROGRESS IN TUBERCULOSIS CONTROL

THE problem of tuberculosis as it affects Canada as a whole was particularly well outlined in a brief recently presented by the Canadian Tuberculosis Association to the Rowell Commission on Provincial-Dominion Relations. It was pointed out that in 1936, 6,763 deaths were due to tuberculosis. When considered by Provinces, the difference between the mortality rates from this disease in Quebec and the Maritime Provinces on the one hand, and in Ontario and the Western Provinces on the other, is striking. Although comprising only 37 per cent. of the population, Quebec and the Maritime Provinces contributed 56 per cent. of all deaths from tuberculosis. The need for intensive work among Indians in the control of tuberculosis was emphasized, indicating that among a total of 107,000 Indians, approximately one per cent. of the population of Canada, 748 deaths from tuberculosis occurred. The Indian population contributed 11 per cent. of the total tuberculosis deaths—a rate just over twelve times that of the white population.

The control of tuberculosis is dependent on early diagnosis and adequate provision of sanatorium accommodation. During the past ten years facilities for diagnosis have been greatly increased throughout Canada. Every Province has provided travelling diagnostic clinics and the staffs of the various sanatoria have assisted in providing supplementary clinics. The number of sanatoria beds has been more than doubled, so that to-day there are approximately 8,500 institutional beds. This represents, however, slightly more than one bed for each death annually. In certain of the Provinces the treatment facilities are still inadequate, with waiting lists of patients. In these Provinces the provincial health officers have drawn attention again and again to the need for additional accommodation. The difficulty lies in meeting the capital outlay and the maintenance costs involved in providing the necessary sanatorium accommodation. That such accommodation represents a large expenditure is shown by a recent survey in Canada in which the capital outlay is conservatively estimated at thirty million dollars and the annual maintenance costs at seven million dollars. In those Provinces which are requiring further accommodation, the tuberculosis death rate remains high. The experience of the past years has shown that the municipalities which have the largest number of tuberculosis cases are the municipalities that are least able to make

it possible for needy cases to receive sanatorium treatment. All health officers know the difficulties that arise in hospitalizing patients who will be a charge on the municipality. It is not alone a problem of providing sanatoria but of maintaining the patients.

The first Province to meet this situation was Saskatchewan. In 1929 that Province provided sanatorium treatment for all tuberculosis patients, without charge to the individual, the cost being met by taxation. The result is reflected in Saskatchewan's achievement of having the lowest tuberculosis death rate in Canada, if not on the continent. Two years ago Alberta made similar provision. In Manitoba, too, although the plan differs from that in Saskatchewan and Alberta, adequate sanatorium accommodation and treatment are provided. With the addition of a large number of beds during the past year, Ontario has considerably more than two beds for each annual death. The recent action of the Provincial Legislature of Ontario in relieving municipalities completely of the cost of sanatorium treatment is in keeping with the highly effective program of tuberculosis control that has been undertaken by that Province. The need for the provision of free sanatorium treatment in Ontario was shown by the fact that only 53 per cent. of the cases dying of tuberculosis in 1936 had received sanatorium treatment. It was recognized that many tuberculosis patients are not actually indigent but cannot pay the costs of hospital care for any length of time and that many municipalities are unable or unwilling to assume responsibility for prolonged hospitalization of cases of tuberculosis. The patient who cannot pay will be cared for but if he can pay even part of the maintenance cost, he will be expected to do so. For the purpose of relieving the municipalities of the cost of sanatorium treatment of patients, one million dollars has been provided in the budget. Ontario is to be heartily commended, and this action constitutes striking evidence of the new realization on the part of the Provincial Governments that tuberculosis is preventable and can be controlled. In Quebec new sanatorium beds are being provided, the Hull Sanatorium being opened last December, and additional sanatoria are planned. In the Maritime Provinces also, further provisions have been made for both diagnostic and treatment facilities. In New Brunswick the Provincial Government has increased its contribution so that municipalities will now be responsible for only 50 per cent. of the cost of hospitalization of patients. Thus notable advances have been made in the provision for the treatment of cases in sanatoria.

Increasing attention is being given by all the Provinces to tuberculosis of bovine origin, through the movement for the pasteurization of all public milk supplies. A most important advance has been made in Ontario, where legislation was enacted at the latest session of the Legislature providing that all milk offered for sale to the public, in those areas in which the Act is proclaimed, shall be pasteurized. When the full effect of the Act is realized, the incidence of tuberculosis of bovine origin will be greatly reduced.

An advance is now possible in the effort to reduce the incidence of tuberculosis among Indians. Within the past month, following a conference between Provincial and Dominion authorities in Ottawa, announcement was made by the Dominion Government of the placing of additional funds at the disposal

of the Department of Indian Affairs. In the program which has been approved, the provincial departments of health will have an active part in the undertaking and the facilities of the Provinces will be fully utilized. This will make possible a joint effort in each Province that has a serious Indian tuberculosis problem. The Canadian Tuberculosis Association is to be heartily congratulated for its leadership in this matter.

Of particular interest in the greatly enlarged program of tuberculosis control in British Columbia is the contribution being made by social service workers in supplementing the work of the public health nurses, the team-work making possible the handling of the public-health and social-service problems of all cases. The opening of the "Vancouver Occupational Industries" marks the first organized community effort in Canada to meet the problem of rehabilitation. The results during the short period of its operation are most promising.

These advances are most encouraging. In some of the Provinces, however, the provision of adequate sanatorium facilities and treatment facilities constitutes a burden too great for their present resources. It is here that grants-in-aid from the Federal Government merit serious consideration. With the success already attained, it is not too much to hope that tuberculosis-free Provinces may be possible of achievement.

CONGRATULATIONS TO QUEBEC AND MANITOBA

AS announced in this issue, the Committee has given first place in the Rural Health Conservation Contest in Canada to the county health unit embracing the counties of St. Jean, Iberville, Laprairie and Napierville, Quebec, with its headquarters in the city of St. Jean, near Montreal. This unit was the second unit to be organized in Quebec and has been functioning for twelve years. Under the direction of Dr. J. H. Maynard, it has maintained an outstanding place among the health units of the Province, and the Association congratulates Dr. Maynard and the members of his staff on the success of their efforts as reflected in this award. Six county health units were selected for the honour of special mention, five in the Province of Quebec and one in Manitoba, indicating the high quality of county health unit work in Canada.

The response in the first rural health conservation contest in Canada has been most gratifying. Of the forty-one full-time health units eligible, thirty-two submitted schedules for grading. The surveying of the resources and activities of each of the units entering the contest has been of great value. The contest has aroused increased interest in each of the communities in the work of their local department. The reports of the findings of the Grading Committee, sent to the medical directors, will prove to be most helpful; and to the county winning the award and to those receiving special mention, the contest brings formal recognition of their achievements.

The success of the contest is gratifying alike to the Canadian Public Health Association and to the American Public Health Association, which, with the W. K. Kellogg Foundation, made possible the holding of the first rural health conservation contest in Canada.

TWENTY-SEVENTH ANNUAL MEETING CANADIAN PUBLIC HEALTH ASSOCIATION

in conjunction with the Annual Meeting of the
NOVA SCOTIA HEALTH OFFICERS ASSOCIATION

HALIFAX, JUNE 20, 21, 22

Headquarters: LORD NELSON HOTEL

THE week of June 20th will be a great medical week in Halifax. On Monday, Tuesday and Wednesday the Canadian Public Health Association will hold its twenty-seventh annual meeting in conjunction with the annual meeting of the Nova Scotia Health Officers Association. During the same week the Canadian Medical Association and the Medical Society of Nova Scotia will be in session. The program of the week presents the field of medicine in all its aspects.

The morning session on Monday, June 20th, will be under the direction of the Nova Scotia Health Officers Association and will present a series of short papers on public health services in Nova Scotia. Two other sessions will be held on Monday, one in the afternoon and one in the evening. At the afternoon session of both associations, Dr. P. S. Campbell, Chief Health Officer of Nova Scotia, will give his presidential address as President of the Canadian Public Health Association. A symposium on full-time health services will be presented, recording the progress in the various Provinces, with particular reference to the Province of Quebec. A preliminary report of the functioning of the newly established Cape Breton Unit in Nova Scotia, and the significant developments in New Brunswick in the formation of health districts, will also be discussed. Presentation will be made of the award of the full-time health unit in Canada having the highest standing as recorded in the rural health conservation contest conducted by the Canadian Public Health Association in co-operation with the American Public Health Association, and

an address will be given by Dr. Grant Fleming, Dean of the Faculty of Medicine, McGill University, and chairman of the Committee on the Rural Health Conservation Contest. Other contributors to this program will include Dr. William A. McIntosh of the Rockefeller Foundation, New York, and Dr. James Wallace, Associate Field Director of the American Public Health Association.



The Lord Nelson Hotel, Headquarters for the meetings of the Canadian Public Health Association and the Nova Scotia Health Officers Association.

On Tuesday morning a series of papers dealing with the control of acute communicable diseases will be presented. This

will include a discussion of the control of scarlet fever, diphtheria-immunization campaigns, and certain interesting findings in regard to typhoid carriers. Experiences in connection with poliomyelitis in New Brunswick will be presented and the opportunity given for a general discussion of the control of this disease.

The general session on Tuesday afternoon will afford the opportunity for a thorough discussion of the control of tuberculosis. Contributing to this symposium will be representatives of Manitoba, Ontario, Prince Edward Island, and Nova Scotia. The annual dinner of the Canadian Public Health Association will be held on Tuesday evening at the Lord Nelson Hotel. Addresses will be given by the Honourable Angus L. Macdonald, Premier of Nova Scotia, and by the Honourable Dr. F. R. Davis, Minister of Health. At this session



The Nova Scotian Hotel, in which the joint session with the Canadian Medical Association on Wednesday, June 22nd, will be held.

presentation of honorary life membership in the Canadian Public Health Association to several distinguished leaders will be made. A program of very special interest is planned.

On Wednesday morning a joint session will be held with the Canadian Medical Association. In view of the serious outbreaks of poliomyelitis in Canada, it was felt that this session would be particularly appreciated. The speakers will include Dr. Alan Brown, Physician-in-chief of the Hospital for Sick Children, Toronto; Dr. J. T. Phair, Chief Medical Officer of Health, Province of Ontario; and other specialists.

The program will be published in detail in the May issue of the *Journal*.

HOTEL ACCOMMODATION

As the attendance at the combined meetings will tax the hotel accommodation of Halifax, the Local Committee on Arrangements desires to urge those planning to attend the meetings to make hotel reservations at the earliest possible time. Requests for reservations may be addressed to the Chairman

of the Hotel Committee, Dr. D. J. MacKenzie, Pathological Building, Morris Street, Halifax. The Lord Nelson Hotel is headquarters for the meetings of the Canadian Public Health Association and the Nova Scotia Health Officers Association.

Hotels and Rates

Lord Nelson Hotel. 186 rooms. Single, \$3.00 and \$4.00 Double, \$5.00 and \$6.00.

Nova Scotian Hotel. 160 rooms. Single, from \$3.50. Double, from \$5.00.

Carleton Hotel. 100 rooms. Single, from \$1.50. Double, from \$3.00.

Halifax Hotel. 175 rooms. Single, from \$2.00. Double, from \$3.50.

Queen Hotel. 100 rooms. Single, from \$1.50. Double, from \$2.50.

DALHOUSIE UNIVERSITY AND THE PUBLIC HEALTH CLINIC

Members of the Canadian Public Health Association will have the pleasure of visiting Dalhousie University, the Dalhousie University Public Health Clinic, and the Dalhousie Medical School. The story of the University forms a most interesting chapter in the history of Nova Scotia.

In 1818 the Lieutenant-Governor, the Right Honourable George Ramsay, ninth Earl of Dalhousie, was instrumental in establishing what is now known as Dalhousie University. In 1841 university powers were conferred on the college by an Act of Parliament but it was not until 1863 that steps were taken towards the establishment of a medical faculty. A partial course in medicine was inaugurated in 1867 and was extended to a complete course three years later. In this movement Dr. Charles Tupper, as Premier of Nova Scotia and as a Governor of Dalhousie, was the leader. The Dean of the Faculty was Dr. A. P. Reid, whose name is so well known in the history of public health in Nova Scotia. The original Dalhousie College building occupied the site of the present city hall. The accommodation was entirely inadequate, the dissecting room being in the attic where the ceiling was so low that the students could not stand upright.

The University was unable to provide adequate support for the medical school and in 1875 the school was detached from Dalhousie and organized as the Halifax Medical College. A building was constructed near the hospital and thenceforth until 1895 this building was used for the major part of the didactic teaching. A close relationship with the University was, however, maintained and from 1885 the students who graduated received the Dalhousie diploma.

In 1911 the University acquired new property to the west, a spacious campus of forty acres on which most of the new buildings have been erected. In that year also the University took over the property of the College and assumed the responsibility for the course in medicine. The College was housed in the Forrest building, which served as the centre of instruction in the pure sciences for the University. Later the pathological building was erected by the Victoria General Hospital, and provided accommodation for the teach-

ing of bacteriology and pathology. This was subsequently replaced by a much larger structure providing adequate facilities. In 1920 the Rockefeller Foundation and the Carnegie Corporation made equal contributions to the University totalling more than one million dollars for improvements in the school. This resulted in an increase in the full-time teaching staff and the erection of the medical science building and the public health clinic. The new medical science building adjoins the Forrest building and houses the departments of physiology, biochemistry, pharmacy, pharmacology and hygiene. The laboratories of anatomy, histology, biology and embryology are located in the Forrest building. In two adjacent city blocks are to be found the Provincial Hospital, the Victoria General, the Children's Hospital, the Hospital for Infectious Diseases, and the Grace Memorial Hospital; and a short distance away is the new Halifax Infirmary. There are thus available in the immediate vicinity teaching hospitals with a total capacity of 665 beds. In the Pathological Institute, which occupies a central position to all the teaching hospitals, is housed the department of pathology and the Provincial Public Health Laboratory.

DALHOUSIE UNIVERSITY PUBLIC HEALTH CLINIC

Of special interest in public health is the Dalhousie University Public Health Clinic. As an essential part of the plans for the enlargement of the facilities of the University in 1920, provision for the housing of the out-patient teaching department was made. Previous to 1924 the out-patient instruction was given at the Halifax Visiting Dispensary, since none of the hospitals had established out-patient departments. The Dalhousie Public Health Clinic, built in 1924 at a cost of approximately \$250,000, serves as an out-patient clinic and permits the centralisation of much of the social service and public health work that is carried on in Halifax. The initial equipment was a present of the Carnegie Corporation. The clinic is situated on the medical campus, flanked on the right by other buildings of the medical school and on the left by the Grace Maternity Hospital, while directly across the street are the buildings of the Victoria General, the Children's, and the Tuberculosis Hospitals. The services have been greatly extended, so that free medical service to the indigent of the city is provided. Dr. H. G. Grant, Dean of the Faculty of Medicine, is the medical director of the Clinic. A staff of physicians, dentists, and nurses provide the services, which accommodated more than 31,000 attendances in 1934. The Department of Public Health of the Provincial Government maintains a genito-urinary clinic. The Rotary Club, the Junior League, the Halifax Anti-tuberculosis League, the Victorian Order, the Good Samaritan Club, and other agencies render valuable assistance in the work of the clinic.

TWENTY-FOURTH ANNUAL MEETING ONTARIO HEALTH OFFICERS ASSOCIATION TORONTO, JUNE 1, 2 and 3

Headquarters: ROYAL YORK HOTEL

A RECORD attendance of the medical officers of health of Ontario is anticipated at the forthcoming twenty-fourth annual conference which will be convened in the Royal York Hotel, Toronto, on June 1st, 2nd and 3rd. Health officers have followed with great interest the progress of the important health legislation which was passed by the Legislature at its recent session and are looking forward to this opportunity of discussing its application. The morning of Wednesday, June 1st, will be devoted to this discussion, which will include the new provisions for the care of tuberculosis patients, compulsory pasteurization of milk supplies, and matters relating to the appointment of personnel in local health departments.

The luncheon session immediately following will be addressed by Dr. B. T. McGhie, Deputy Minister of Health, who will speak on "The Training of Personnel for Local Administration of Public Health as a Responsibility of the Department of Health of Ontario."

At the afternoon session, the Honourable Harold J. Kirby, Minister of Health, will address the medical officers of health assembled in conference, for the first time since his appointment as head of the Department.

Among the subjects of general interest to physicians listed for discussion in this session are: pneumonia, the use of sulphanilamide, and tuberculosis.

For the Thursday morning sessions, the conference will be divided into two groups. The urban medical officers of health will meet in Parlor "A" for discussion of problems having special significance for them. Dr. Edgar Davey will be pleased to receive suggestions in regard to this program. The medical officers of health for the smaller communities will meet in the Crystal Ballroom. The program for this group is being arranged under the direction of Dr. W. H. Birks.

The Thursday afternoon program includes a statement of the epidemiological findings and suggested administrative procedures based on the 1937 epidemic of poliomyelitis in Ontario. The executive hopes to be able to announce the acceptance of Dr. John A. Ferrell, Associate Director of the International Health Division, the Rockefeller Foundation, New York, to speak on the subject of "The Necessity for a Comprehensive Unit of Administration in Public Health Work".

The informal dinner which has proved to be such a popular session of the annual conference will be held at 6.45 p.m. in the Crystal Ballroom on Thursday, June 2nd. A prominent guest speaker is expected.

Following requests from the members, Friday morning will be devoted to sectional meetings. Section "A" will include epidemiology, tuberculosis, and medical statistics. Section "B" will cover problems of sanitary engineering and environmental hygiene. Section "C" will provide an interesting and varied series of short discussions and demonstrations connected with laboratory



THE HON. HAROLD J. KIRBY
Minister of Health, Ontario;
Honorary President, Ontario Health Officers
Association



DR. W. H. BIRKS
Medical Officer of Health, Bowmanville;
President, Ontario Health Officers
Association

services and techniques. In addition to the above, there will be presented special features regarding cancer control, public health nursing and dental hygiene.

As an attraction of the 1938 conference, a reference library has been assembled covering the latest books and current periodicals in the field of public health. A librarian will be in charge throughout the sessions to furnish information to the medical officers of health, public health nurses, sanitary inspectors and other interested health workers.

The officers of the Association are: President, Dr. W. H. Birks, Medical Officer of Health, Bowmanville; Vice-president, Dr. T. H. McColl, Medical Officer of Health, Tilbury; Second Vice-president, Dr. C. A. Warren; Secretary, Miss Mary Power; Executive Committee, Dr. Edgar Davey, Hamilton, Dr. T. A. Lomer, Ottawa, Dr. C. H. Bird, Gananoque, Dr. F. Ladouceur, Casselman, and Dr. J. W. Mackie, Lansdowne.

LETTER FROM GREAT BRITAIN

GEORGE F. BUCHAN, M.D., F.R.C.P., D.P.H.
London

POST-GRADUATE COURSES

AN interesting feature of the 1937-38 session of the Society of Medical Officers of Health has been the institution by the Society of post-graduate courses for medical officers in the public health service. These courses have the approval of the Ministry of Health and the Board of Education and local authorities are empowered to pay the expenses of such of their medical officers as they permit to attend.

Three courses have been held—one at Cardiff for medical officers of health, one at Manchester for school medical officers and one in London for medical officers connected with infectious diseases hospitals. The numbers attending the courses have been limited and from the experience already gained it would appear that 25 is the maximum number who can receive satisfactory instruction. The courses are designed so as to present subjects of particular interest to the type of medical officer attending. These subjects are dealt with both by lecture and demonstration by an expert in the particular field. The matter is then open to discussion by the participants of the course and difficulties which might arise in giving full effect to the suggestions of the lecturer in the various areas represented by the participants are fully explored and considered. The courses have at once a scientific and a practical bearing. They have been enthusiastically received and members who have attended have derived great benefit. They are likely to become a permanent feature of the Society's program each year.

THE HEALTH OF THE SCHOOL CHILD *Nutrition*

THE ANNUAL Report of the Chief Medical Officer to the Board of Edu-

cation for 1936 has now been issued. The report begins with the nutrition of the school child. The year 1936 was the second year in which the new clinical assessment was in use. The categories into which the children are required to be put according to their state of nutrition are excellent, good, slightly subnormal and bad. There has been much discussion of this clinical classification on the grounds that its categories have to be determined by mental concepts or in other words by the impression of medical officers as to the general well-being of the child. At the present time, however, there does not seem to be any practicable alternative method which is not open to even greater objections. The percentage placed in the four categories in 1936 were almost identical with those in 1935: 14.6 per cent. in A (excellent), 74.2 per cent. in B (normal), 10.5 per cent. in C (slightly subnormal) and 0.7 per cent. in D (bad). Different children were examined in each of the two years and the assessments made by 1,300 observers. The coincidence of the proportion in the two years is noteworthy. It must not be directly inferred that 11.2 per cent. (Classes C and D) are underfed or improperly fed. It may be so but optimum nutrition in a child is not solely dependent on an adequate diet. It is also and in large measure dependent on other factors—sufficient sleep, proper and uncrowded housing, fresh air, exercise and a happy school and home life. Many school medical officers, and some of the physicians in charge of the nutrition clinics in London, whilst paying due attention to diet, draw attention to these factors in their reports for 1936. Reports of investigations comparing the physique of children in new housing areas with those in old city districts are given for York. At prac-

tically all ages the children in new housing areas are taller and heavier than the city children.

Comparisons of heights and weights of children of 1936 with those of previous and pre-war years are reported by several medical officers. Increases are general and in Bradford where prior to 1921 very many children were engaged in half-time labour, the differences are particularly noticeable—the 1936 children, boys and girls, are at least one inch taller and at least 6 lbs. heavier.

Dealing with the provision of meals and milk the report states that the number of children receiving solid meals was less than in the previous year but the number receiving milk meals was much greater. The continued fall in the number of free solid meals supplied appears to be due to the improved industrial position which has resulted in the income of the parents rising above the income scales of the local authorities. About half the children attending public elementary schools receive milk, some paying one halfpenny for one-third of a pint. Less than half of those who can afford to buy milk do so. Indifference on the part of the parent and distaste for milk on the part of the children are given as reasons. The Board urge the use of "pasteurised" milk for safety.

Physical Education

THE YEAR 1936 was marked by two conspicuous events in the development of the official policy of physical education. A circular issued in January by the Board gave their views as to the policy to be pursued and the latter part of the year saw the initiation of a further Government scheme for encouraging recreative and physical activities among those who have left school. The circular emphasised the need for better accommodation for physical training and games in schools; the need for adequate allotment of time in the curriculum to physical activities; the need for teachers trained in modern educational gymnastics and the need

for utilising the services of organisers by all Education Authorities. The Government scheme for the provision of facilities for persons over school age was embodied in a white paper on Physical Training and Recreation and in the subsequent Physical Training and Recreation Act. The National Council for Physical Training and Recreation has been called into being as the central advisory body on all matters connected with physical training. This Council will co-ordinate and guide the work of local authorities and voluntary organisations connected with physical well-being. Area committees have been set up through which will be distributed the grants from £2,000,000 allocated during the next three years for the development of physical training.

Medical Inspection and Treatment

IN MEDICAL inspection there has in the last decade been a gradual change in character. There has been an increase of 65 per cent. in the number of special inspections, so that for every 100 routine inspections there are now 83 special inspections. Whilst many medical officers continue to criticise the present system of routine inspection, the prevalent opinion seems to be that any changes which may be introduced should be by addition to the present framework, rather than by discarding the present scheme completely and building afresh.

In the matter of medical treatment there has been a great growth of facilities. Education Authorities have for some time arranged treatment for defects of eyes, teeth, for minor ailments and for diseased tonsils and adenoids. Now many authorities make arrangements for treatment of disease of the ear, nose and throat, orthopaedic defects, cases of chronic and sub-acute rheumatism, speech defects, ringworm of the scalp, behaviour disorders and the provision of facilities for artificial light treatment. These have been added to the general scheme as the need arose and are not the result of

any plan laid down when the service was started.

The number of nursery schools for children under five steadily increases. There are 92 such schools now, 41 provided by local education authorities and 51 by voluntary agencies. Four new schools have been approved and a further 13 are under consideration. The children in these schools do not attend welfare centres but are examined frequently by the school nurse and any unsatisfactory progress reported to the school doctor.

Education and Training of the Blind

THE COMMITTEE of Research into Education of the Blind have published their report. With the existing framework of administrative provisions the Committee appear satisfied and within it make their observations.

Blind children are undoubtedly promptly ascertained. There are, however, three classes who cause special difficulty—(a) children on the borderline of sight; (b) children whose vision is deteriorating and (c) children with other defects. It is possible in the first two classes that avoidable delay in sending to blind schools occurs. In the third class the other defects may make the possibility of any education problematical. The Committee were satisfied that there were very few children who from failure of ascertainment were denied education in blind schools. Blind children who are backward physically, socially or educationally are a difficult problem. There are no schools for the blind mentally defective children. They are thus seldom certified as mentally defective. All grades of intelligence above imbecility are therefore found in blind schools and provided the schools be large enough to make provision for them, the ordinary blind school is the best place for them. If the school be small, very backward children are best dealt with by the Mental Deficiency Authority. If backwardness be due to physical weakness or educational causes they are best

sent to a residential school for retarded blind children where more individual attention can be given.

Nearly all blind schools were built long ago and do not come up to modern standards. The blind require much more space than the seeing, both indoors and out, and require not bareness but a profusion of things that will tempt them to action. The Report comments on the obsolete and unsatisfactory apparatus and equipment for physical training now in use at some blind schools. It is pointed out that there should be continuity in the education and training of the blind, that handwork subjects taught in the last two years of schooling should prepare for the more technical training to be given when the child reaches the age of 16 and that during the period of technical training, non-vocational subjects should form an integral part of the curriculum.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

THE REPORT on the work of the School for the year 1936-37 has recently been published.

The death of Sir Austen Chamberlain, K.G., during the year created a vacancy in the Chairmanship of the Court of Governors. It is highly gratifying to note that the association of the Chamberlain family with the London School of Hygiene and Tropical Medicine will be continued by the acceptance of the vacant Chairmanship by the present Prime Minister, the Right Honourable Neville Chamberlain, M.P.

A summary of the work of the School by the Dean, Professor W. W. Jameson, discloses a vast organisation for the study of public health and tropical medicine and associated subjects. It would be impossible in a brief summary of this kind to state all the good work that is being done, but I should like to draw attention to one or two outstanding investigations.

The joint researches of the Divisions of Bacteriology and Biochemistry have

resulted in the isolation of chemical fractions, which appear to have effective immunising powers, from the organisms of typhoid fever, whooping cough, cholera and from certain strains of haemolytic streptococci. It is stated that the practical application of the results obtained with some of these organisms is within view and that it will give a new direction to practice in relation to the whole group of infectious diseases. The Bacteriological Department has shown that a particular bacteriophage active against virulent strains of *B. typhosus* exert a marked protective action in mice.

The Department of Industrial Physiology have amongst many other things been engaged on air conditioning. A cubicle designed for one occupant, furnished with a bed, table and chair, was subjected to very severe conditions of tropical heat and humidity in the air-conditioning room and the tests proved that with a relatively small air-conditioning unit, comfort could be provided for rest or sleep. Portable cubicles with a small portable air-conditioning plant will probably be available for dwellers in the tropics at moderate prices. Investigation into the rates of air exchange in dwellings has been carried out, the Inter-Departmental Committee on Heating and Ventilating Research having called attention to the lack of information on

this subject. The jet fan ventilator for cooling workpeople in factories likely to become very hot in summer has been further developed. A semi-portable and silent machine has been devised. Such an apparatus is of particular value where street noises make it imperative to keep the window shut. Another important property of the fan is the ability to dilute local fume concentration to such an extent as to render the fumes innocuous. Such a fan has been installed in a factory using a volatile cleaning liquid with beneficial results. Before its use many girls complained of headache and some fainted, but these ill-effects have disappeared with its installation.

The Medical Industrial Psychology Department have been conducting research into problems connected with industrial health, of which the following are important examples: the physical standards for light, moderate and heavy work; what constitutes a reasonable amount of sickness in various occupations; what illnesses occasion the greatest loss; sickness risks in specific occupations; industrial misfits, e.g., people who lose occupation though possessing requisite technical qualifications; and the qualities required for those who are to be in charge of subordinates. I am looking forward with interest to the findings of the last-mentioned research.

The First Canadian Rural Health Contest

ANNOUNCEMENT of the awards in the rural health conservation contests both in the United States and Canada was made on April 25th. The announcement was awaited with great interest, as 241 counties had entered the contest in the United States and in Canada 35 of the 41 full-time county health units. The rural health conservation contest was introduced by the American Public Health Association four years ago, as an extension of the health conservation contests in cities. The Chamber of Commerce of the United States has rendered valuable service in sponsoring the contests. The extension of the contests to rural areas was made possible by funds supplied by the W. K. Kellogg Foundation. The holding of the first rural health conservation contest in Canada this year by the Canadian Public Health Association, through the co-operation of the American Public Health Association, met with a hearty response from the organized health units.

The Committee's announcement is as follows:

Winning Unit: St. Jean-Iberville-Laprairie-Napierville Health Unit, St. Jean, Que., Dr. J. H. Maynard, D.P.H., Medical Officer.

Awards of Merit:

St. Maurice County Health Unit, Shawinigan, Que., Dr. A. Bossinotte, D.P.H., Medical Officer.

Terrebonne County Health Unit, St. Jerome, Que., Dr. L. R. Vézina, D.P.H., Medical Officer.

St. James-St. Vital Health District, St. James, Man., Dr. I. M. Cleghorn, D.P.H., Medical Officer.

Kamouraska-L'Islet County Health Unit, Ste. Anne de la Pocatiere, Que., Dr. R. Deschênes, D.P.H., Medical Officer.

Nicolet County Health Unit, Nicolet, Que., Dr. Jean Paquin, D.P.H., Medical Officer.

Chateauguay-Huntingdon County Health Unit, Ste. Martine, Que., Dr. J. A. Patenaude, D.P.H., Medical Officer.

Each full-time unit participating in the contest is required to appraise its health activities by preparing a fact-finding schedule that covers minimum basic rural public health services. Associated in the preparation of this schedule is a local lay committee with representative of business, industry and agriculture as well as professional representation. The schedule permits of a reasonably sound judgment of the community public health program. When completed, the schedule is considered by the Grading Committee, and a detailed analysis of the schedule is forwarded to the unit. These analyses have proved to be of great value to the directors of county health units and are of interest also to the members of the lay committee, who learn of the community's needs. In the conduct of the contest in Canada, the visits made to a number of the health units by Dr. James Wallace, Associate Field Director of the American Public Health Association, were greatly appreciated. It is anticipated that not only the units which entered the contest this year, but also those which were unable to do so, will enroll in future contests. Thus the value of the effort is cumulative and valuable information is made available to the unit directors annually by participation in the contest. Although the competitive aspect of the contest tends to stimulate interest, it is designed primarily to encourage the development of sound rural public health work.

Presentation of the silver and bronze plaque to the winning unit, and of the diplomas to the six units named, will be made by a representative of the American Public Health Association at the forthcoming annual meeting of the Canadian Public Health Association in Halifax, and an address will be given by Dr. Grant Fleming, Chairman of the Canadian Committee.

BOOKS AND REPORTS

Handbook of Hygiene. *Joseph W. Bigger. Bailliere, Tindall and Cox, 7-8 Henrietta St., Covent Garden, London, W.C.2, 1937. 405 pages. 10s: 6d.*

AFTER an introductory chapter on vital statistics, communicable diseases are discussed, first in general and then in particular, their classification being as far as possible according to their methods of transmission. Then follow chapters on disinfection, insects and vermin, water, food, air and ventilation, disposal of waste, sewage, environment, occupational hygiene, poisonous gases, maternity, infant and child hygiene, and personal hygiene.

As the book occupies only 400 rather small pages, the treatment of every section is necessarily superficial—probably too superficial to please the experts in any particular subject—but in spite of this the information is always adequately complete, up-to-date, and very much to the point. As the author himself points out, it is meant for the medical student and the nurse rather than for those studying for the Diploma in Public Health.

Written in Dublin, administrative aspects of the subject conform more to British than American or Canadian practice, but this side of the subject is wisely kept very much in the background and need not militate against its employment outside the British Isles.

It is also somewhat encouraging to find that the engineering aspects of public health occupy a quite minor place. Indeed, the author himself says "Domestic sanitation has now passed quite correctly from the control of doctors to that of engineers and plumbers."

On the other hand, personal hygiene and the assessment of normal health are treated somewhat more fully than is usually the case in a book of this type. But is an unhappy indictment of

our modern civilization that ten pages (the same space devoted to the whole of maternity, infant and child hygiene) are required for a description of the gases of warfare and methods for combating them.

While a short bibliography at the end of each chapter might have been of value to the enquiring student, nevertheless the book is eminently readable and practical, for which reason it may be heartily recommended for those for whom it was written.

Ronald Hare

A Textbook of Hematology. *William Magner, M.D., D.P.H. P. Blakiston's Son & Co. Inc., Philadelphia, Pa., 1938. Xvi + 395 pages, with illustrations. \$4.50.*

THIS LABORATORY volume is a practical guide that will be appreciated by all who are concerned with hematology. The first seven chapters are devoted to a discussion of the cellular elements of the blood and bone marrow, blood formation and destruction, and hemoglobin and its derivatives, together with a presentation of laboratory methods. The presentation of these subjects occupies about one-third of the volume, permitting of a thorough discussion of the pathogenesis, types and treatment of the anaemias and leukaemias. The presentation follows the accepted procedure of the older books in that the study of hematology tends to be kept separate from immunology and tissue pathology. No mention is made either of the recent researches by micro-methods into the composition and chemistry of white cells. These omissions cannot be considered a defect when it is remembered that the book is written as a short reference to methods and diagnosis. Three charts, three coloured photographs and twenty-three photomicrographs are included and the book is thoroughly indexed.

H. A. Ansley

